2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Montgomery

STREAM NAME: Wilson Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L02R_WLN01A00

SEGMENT SIZE: 6.91 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2002 - 2006

UPSTREAM LIMIT:

DESCRIPTION: East of Rt. 460, Off Rt. 723, Christiansburg.

RIVER MILE: 6.91

LATITUDE: 37.14194 **LONGTITUDE:** -80.39083

DOWNSTREAM LIMIT:

DESCRIPTION: Wilson Creek mouth on N.F. Roanoke R.

RIVER MILE: 0.00

LATITUDE: 37.18778 **LONGTITUDE:** -80.35222

The upper limit is just east of Rt. 460, off Rt. 723 near Christiansburg (Blacksburg Quad). The segment ends at the mouth of Wilson Creek on the North Fork of the Roanoke River just upstream of Rt. 603. The segment includes an unnamed tributary (1.65 mi.) that enters on the northern side of Wilson Creek. The segment spans the Blacksburg and Ironto Quads.

Note: The 1998 segment has been expanded to include an unnamed tributary. Other slight mileage adjustments are due to the use of the National Hydrography Dataset (NHD).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Fecal coliform bacteria counts fail to meet the requirements for the swimming use. Seven of 23 samples exceed the fecal coliform bacteria instantaneous criterion of 1000 n/100 ml. The assessment is based on data at station 4AWLN000.40 at the Rt. 603 Br. The segment has expanded (1.65) over the 1998 Impaired waters list with the addition of an unnamed tributary entering Wilson Creek from the north.

IMPAIRMENT SOURCE NPS - Urban

The source of the impairment is believed to be nonpoint source pollution due to urban activities. The Wilson Creek drainage lies within the corridor between Christiansburg and Blacksburg that has seen a great deal of development.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Montgomery

STREAM NAME: North Fork Roanoke River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L02R_RNF03A02

SEGMENT SIZE: 6.56 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2004 - 2006

UPSTREAM LIMIT:

DESCRIPTION: Wilson Creek mouth on the N.F. Roanoke R.

RIVER MILE: 15.21

LATITUDE: 37.18750 **LONGTITUDE:** -80.35236

DOWNSTREAM LIMIT:

DESCRIPTION: Unnamed Tributary in Ironto

RIVER MILE: 8.65

LATITUDE: 37.21639 **LONGTITUDE:** -80.27680

The upper limit is located at the mouth of Wilson Cr. on the North Fork Roanoke River. The downstream segment end is at an unnamed tributary in the community of Ironto.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting, Fish Consumption Use - Threatened

IMPAIRMENT CAUSE: Fecal Coliform, Metals in fish tissue

Swimming Use
Station 4ARNF015.09, located just downstream of the Rt. 603 crossing in Montgomery County, records four of nine samples exceeding the fecal coliform bacteria instantaneous criterion of 1000 n/100 ml. The swimming use is not supported in this segment.

Fish Consumption Use
A 1999 fish tissue collection at 4ARNF013.60 finds the waters fully supporting, but threatened for the fish consumption use due to exceedance of the human health-risk carcinogenic screening value (SV) of 0.072 parts per million (ppm) for arsenic (As). Two species exceed the SV. Fish tissue results reveal a Green Sunfish at 0.51 ppm and a Redhorse Sucker at 1.3 ppm causing the waters to be 'Threatened' per guidance Table 6b.

Aquatic Life Use
A 1999 sediment collection made at 4ARNF013.60 (Off Rt. 603 at Ford n/NS Railroad) finds an exceedance of the 1995 NOAA sediment effect range-median (ER-M) screening value (SV) in parts per billion (ppb) for DDT at 21.98 ppb (SV= 7 ppb).

IMPAIRMENT SOURCE NPS - Urban, Unknown

Swimming Use

The source of the impairment is believed to be nonpoint source pollution due to urban activities. There are some agricultural activities in this area as well. This segment is downstream of the Wilson Creek segment that does not support the swimming use. Effects of Wilson Creek segment may contribute to the exceedances in the N.F. Roanoke R.

Fish Consumption Use
The source of the arsenic in fish tissue is unknown.

Aquatic Life Use
The source of the sediment organic exceedance is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Roanoke, Salem, City of

STREAM NAME: Roanoke River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L03R_ROA02A00

SEGMENT SIZE: 6.06 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2004 - 2006

UPSTREAM LIMIT:

DESCRIPTION: Big Bear Rock Br. mouth on the Roanoke R.

RIVER MILE: 217.73

LATITUDE: 37.26861 **LONGTITUDE:** -80.12870

DOWNSTREAM LIMIT:

DESCRIPTION: Rt. 11 Bridge nearest Rt. 419.

RIVER MILE: 211.67

LATITUDE: 37.27111 **LONGTITUDE:** -80.03884

The segment extends from the Big Bear Rock Branch mouth on the Roanoke River at river mile 217.73 (Glenvar Quad) downstream to the Rt. 11 Bridge nearest Rt. 419 crossing the Roanoke at river mile 211.67 (Salem Quad).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially / Not Supporting, Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, Fish Tissue - PCBs

Monitoring station locations are: 4AROA227.42 (Rt. 773 in Montgomery County), 4AROA219.99 (Rt. 612 Bridge - at Wabum), 4AROA216.33 Roanoke R., (Salem, Below Koppers downstream of Rts. 760 & 639 junction) and 4AROA212.17 (Riverside Drive - Rt. 11 Bridge nearest Rt. 419)

Swimming Use
The basis of the swimming use impairment are data collected from two sites along the Roanoke River. Station 4AROA212.17 records six exceedances of the fecal coliform bacteria criterion of 1000 n/100 ml from 59 samples (Partial Support). Fifteen of 59 samples exceed the criterion at station 4AROA202.20 (Not Supporting). The 1998 impaired swimming use segment now extends from the Big Bear Branch mouth (37°16'07" / 080°07'42") on the Roanoke River downstream to the Roanoke Regional STP outfall. A total of 17.13 miles.

Aquatic Life Use
Exceedance of the water quality standards (WQS) Class V waters temperature criterion of 21 °C causes an overlapping partial support of the aquatic life use. Station 4AROA227.42 records seven exceedances from 59 measurements in this stockable trout water. The seven exceedances ranged from 21.2 to 23.1 °C and occur in the summer months of June, July and August. Downstream station 4AROA212.17 reports 11 of 67 temperature measurements exceed the criterion. Maxima ranged from 22.5 to 24.5 °C. Two exceedances occur in May 1998 and 2000. The remainder occur in June, July and August from 1997 through 2000. A separate Part 1C (natural) fact sheet describes the 15.31 mile partially supporting aquatic life use segment

that extends from the confluence of the North and South Forks of the Roanoke River downstream to the Rt. 11/419 crossing (37°16'18 / 080°02'20").

The segment is also fully supporting, but threatened for the aquatic life use for 17.13 miles. Station 4A212.17 notes a 1999 exceedance of the 1995 NOAA effect range- median (ER-M) sediment screening value for chlorodane (SV=6.0 ppb) at 10 ppb. Station 4AROA202.20 records 50 ppb for chlorodane. Station 4AROA216.33 finds a 1999 exceedance of DDT (SV= 7) at 11.28 ppb.

Fish Consumption Use
The waters only partially support the fish consumption use due to exceedance of the human health-risk carcinogenic screening value (SV) of 54 parts per billion (ppb) for polychlorinated biphenyls (PCBs). A Tier 2 fish tissue study (1993 Roanoke River Basin Study DEQ, Water Research & Standards, Richmond, Virginia) found PCBs in excess of the SV from one species; Bluehead Chub (87.9 max.) at 4AROA219.99. The maximum was recorded in one fish from nine total fish collected for the species. A total of 39 fish were collected. Other species were: Smallmouth Bass, Rock Bass, Redbrest Sunfish and Redhorse Sucker. All were below the SV.

1999 fish tissue collections at Station 4AROA216.33 found PCBs in excess of the SV from one species; Carp @192 ppb. 4AROA206.80 records PCB in tissue from one species; Rock Bass @130 ppb. Monitoring of fish tissue and sediment should continue.

This fact sheet describes the a 7.26 mile portion of the total riverine partially supporting fish consumption use impairment (28.35 miles). The total impairment extends from Dixie Caverns in VAW-L03R (37°15'07" / 080°10'20") on downstream through watershed VAW-L04R into Smith Mountain Lake VAW-L12L (37°13'57" / 079°50'51") ~1 mile below the Hales Ford Bridge. The total mileage for the fish consumption impairment is 50.01 miles or 28.35 Roanoke River miles and 3249 lake acres.

There is no Virginia Department of Health (VDH) Advisory. Fish tissue concentrations are below the VDH 600 ppb level of concern. Information on the fish tissue sampling program can be viewed at http://www.deq.state.va.us.

IMPAIRMENT SOURCE NPS - Urban, Unknown

Swimming Use
The source of the fecal coliform bacteria is believed to be from nonpoint source runoff in the urban area. The Roanoke Regional WPCP reached hydraulic capacity in 1985. At that point it began improving the collection system that transports wastewater to the plant. A new interceptor along the Roanoke River is complete with other improvements to the system along Tinker Creek also completed.

Aquatic Life Use
The source of the temperature exceedances are believed to be natural due to solar radiation. Exceedances occur upstream of any heat sources. There are no known sources of heat contributing to impairment.

The source of the sediment chlorodane exceedance is unknown.

Fish Consumption Use
The exact sources of the PCB contamination are unknown.

The Virginia Department of Health (VDH) action level for PCBs is 600 ppb in fish tissue. PCBs are a group of man-made chemicals that can contain up to 209 individual compounds. The Virginia Department of Health (VDH) review of the 1993 study by the Toxic Substances Program reports ". . . that none of the contaminants, at reported concentrations, poses an imminent threat to human health from consuming fish." (January 17, 1997, letter from Khizar Wasti, Director, Division of Health Hazards Control, VDH to Alan Anthony, Director, Water Research & Standards, DEQ).

PCBs are a group of man-made industrial chemicals that exist as a mixture and may contain up to 209 individual compounds. Since 1977, PCBs have not been produced in the U.S., but are still found in the environment. PCBs were once widely used as coolants and lubricants in transformers, capacitors and other electrical equipment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Salem, City of

STREAM NAME: Roanoke River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L03R_ROA01A00

SEGMENT SIZE: 1.2 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Rt. 11 Bridge nearest Rt. 419.

RIVER MILE: 211.67

LATITUDE: 37.27111 **LONGTITUDE:** -80.03884

DOWNSTREAM LIMIT:

DESCRIPTION: Confluence of Mason Cr. on the Roanoke R.

RIVER MILE: 210.47

LATITUDE: 37.26944 **LONGTITUDE:** -80.02428

The segment begins at the Rt. 11 Bridge nearest Rt. 419 crossing the Roanoke River extending downstream to the Mason Creek mouth on the Roanoke at river mile 210.47 (Salem Quad).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially / Not Supporting, Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, Fish Tissue - PCBs

Monitoring station locations are: 4AROA227.42 (Rt. 773 in Montgomery County), 4AROA219.99 (Rt. 612 Bridge - at Wabum), 4AROA216.33 Roanoke R., (Salem, Below Koppers downstream of Rts. 760 & 639 junction) and 4AROA212.17 (Riverside Drive - Rt. 11 Bridge nearest Rt. 419)

Swimming Use
The basis of the swimming use impairment are data collected from two sites along the Roanoke River. Station 4AROA212.17 records six exceedances of the fecal coliform bacteria criterion of 1000 n/100 ml from 59 samples (Partial Support). Fifteen of 59 samples exceed the criterion at station 4AROA202.20 (Not Supporting). The 1998 impaired swimming use segment now extends from the Big Bear Branch mouth (37°16'07" / 080°07'42") on the Roanoke River downstream to the Roanoke Regional STP outfall. A total of 17.13 miles.

Fish Consumption Use
The waters only partially support the fish consumption use due to exceedance of the human health-risk carcinogenic screening value (SV) of 54 parts per billion (ppb) for polychlorinated biphenyls (PCBs). A Tier 2 fish tissue study (1993 Roanoke River Basin Study DEQ, Water Research & Standards, Richmond, Virginia) found PCBs in excess of the SV from one species; Bluehead Chub (87.9 max.) at 4AROA219.99. The maximum was recorded in one fish from nine total fish collected for the species. A total of 39 fish were collected. Other species were: Smallmouth Bass, Rock Bass, Redbrest Sunfish and Redhorse Sucker. All were below the SV.

1999 fish tissue collections at Station 4AROA216.33 found PCBs in excess of the SV from one species; Carp @192 ppb. 4AROA206.80 records PCB in tissue from one species; Rock Bass @130 ppb. Monitoring of fish tissue and sediment should continue.

This fact sheet describes the a 7.26 mile portion of the total riverine partially supporting fish consumption use impairment (28.35 miles). The total impairment extends from Dixie Caverns in VAW-L03R (37°15'07" / 080°10'20") on downstream through watershed VAW-L04R into Smith Mountain Lake VAW-L12L (37°13'57" / 079°50'51") ~1 mile below the Hales Ford Bridge. The total mileage for the fish consumption impairment is 50.01 miles or 28.35 Roanoke River miles and 3249 lake acres.

There is no Virginia Department of Health (VDH) Advisory. Fish tissue concentrations are below the VDH 600 ppb level of concern. Information on the fish tissue sampling program can be viewed at http://www.deq.state.va.us.

Aquatic Life Use
The segment is also fully supporting, but threatened for the aquatic life use for 17.13 miles. Station 4A212.17 notes a 1999 exceedance of the 1995 NOAA effect range- median (ER-M) sediment screening value for chlorodane (SV=6.0 ppb) at 10 ppb. Station 4AROA202.20 records 50 ppb for chlorodane. Station 4AROA216.33 finds a 1999 exceedance of DDT (SV= 7) at 11.28 ppb.

IMPAIRMENT SOURCE NPS - Urban, Unknown

Swimming Use
The source of the fecal coliform bacteria is believed to be from nonpoint source runoff in the urban area. The Roanoke Regional WPCP reached hydraulic capacity in 1985. At that point it began improving the collection system that transports wastewater to the plant. A new interceptor along the Roanoke River is complete with other improvements to the system along Tinker Creek also completed.

Fish Consumption Use
The exact sources of the PCB contamination are unknown.

The Virginia Department of Health (VDH) action level for PCBs is 600 ppb in fish tissue. PCBs are a group of man-made chemicals that can contain up to 209 individual compounds. The Virginia Department of Health (VDH) review of the 1993 study by the Toxic Substances Program reports ". . . that none of the contaminants, at reported concentrations, poses an imminent threat to human health from consuming fish." (January 17, 1997, letter from Khizar Wasti, Director, Division of Health Hazards Control, VDH to Alan Anthony, Director, Water Research & Standards, DEQ).

PCBs are a group of man-made industrial chemicals that exist as a mixture and may contain up to 209 individual compounds. Since 1977, PCBs have not been produced in the U.S., but are still found in the environment. PCBs were once widely used as coolants and lubricants in transformers, capacitors and other electrical equipment.

Aquatic Life Use
The source of the sediment chlorodane exceedance is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Roanoke

STREAM NAME: Roanoke River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L03R_ROA04A00

SEGMENT SIZE: 5.62 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2004 - 2006

UPSTREAM LIMIT:

DESCRIPTION: Near Dixie Caverns

RIVER MILE: 223.35

LATITUDE: 37.25194 **LONGTITUDE:** -80.17232

DOWNSTREAM LIMIT:

DESCRIPTION: Big Bear Rock Br. mouth on the Roanoke R.

RIVER MILE: 217.73

LATITUDE: 37.26861 **LONGTITUDE:** -80.12870

The segment begins near Dixie Caverns extending downstream to the confluence of Big Bear Rock Branch on the Roanoke at river mile 217.73. The segment spans the Glenvar and Elliston Quads.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Fish Tissue - PCBs

Monitoring station locations are: 4AROA227.42 (Rt. 773 in Montgomery County), 4AROA219.99 (Rt. 612 Bridge - at Wabum), 4AROA216.33 Roanoke R., (Salem, Below Koppers downstream of Rts. 760 & 639 junction) and 4AROA212.17 (Riverside Drive - Rt. 11 Bridge nearest Rt. 419).

Aquatic Life Use

Exceedance of the water quality standards (WQS) Class V waters temperature criterion of 21 °C causes an overlapping partial support of the aquatic life use. Station 4AROA227.42 records seven exceedances from 59 measurements in this stockable trout water. The seven exceedances ranged from 21.2 to 23.1 °C and occur in the summer months of June, July and August. Downstream station 4AROA212.17 reports 11 of 67 temperature measurements exceed the criterion. Maxima ranged from 22.5 to 24.5 °C. Two exceedances occur in May 1998 and 2000. The remainder occur in June, July and August from 1997 through 2000. A separate Part 1C (natural) fact sheet describes the total 15.31 mile partially supporting aquatic life use segment that extends from the confluence of the North and South Forks of the Roanoke River downstream to the Rt. 11/419 crossing (37°16'18 / 080°02'20").

Fish Consumption Use

The waters only partially support the fish consumption use due to exceedance of the human health-risk carcinogenic screening value (SV) of 54 parts per billion (ppb) for polychlorinated biphenyls (PCBs). A Tier 2 fish tissue study (1993 Roanoke River Basin Study DEQ, Water Research & Standards, Richmond, Virginia) found PCBs in excess of the SV from one species; Bluehead Chub (87.9 max.) at 4AROA219.99. The maximum was recorded in one fish from nine total fish collected for the species. A total of 39 fish were

collected. Other species were: Smallmouth Bass, Rock Bass, Redbrest Sunfish and Redhorse Sucker. All were below the SV.

1999 fish tissue collections at Station 4AROA216.33 found PCBs in excess of the SV from one species; Carp @192 ppb. 4AROA206.80 records PCB in tissue from one species; Rock Bass @130 ppb. Monitoring of fish tissue and sediment should continue.

This fact sheet describes the upper riverine portion (5.62 miles) of the overall 28.35 mile total partially supporting fish consumption use impairment. The impairment extends from near Dixie Caverns in VAW-L03R (37°15'07" / 080°10'20") on downstream through watershed VAW-L04R into Smith Mountain Lake VAW-L12L (37°13'57" / 079°50'51") ~1 mile below the Hales Ford Bridge. The total mileage for the fish consumption impairment is 50.01 miles or 28.35 Roanoke River miles and 3249 lake acres.

There is no Virginia Department of Health (VDH) Advisory. Fish tissue concentrations are below the VDH 600 ppb level of concern. Information on the fish tissue sampling program can be viewed at http://www.deq.state.va.us.

IMPAIRMENT SOURCE Unknown

Aquatic Life Use
The source of the temperature exceedances are believed to be natural due to solar radiation. Exceedances occur upstream of any heat sources. There are no known sources of heat contributing to impairment.

Fish Consumption Use
The exact sources of the PCB contamination are unknown.

The Virginia Department of Health (VDH) action level for PCBs is 600 ppb in fish tissue. PCBs are a group of man-made chemicals that can contain up to 209 individual compounds. The Virginia Department of Health (VDH) review of the 1993 study by the Toxic Substances Program reports ". . . that none of the contaminants, at reported concentrations, poses an imminent threat to human health from consuming fish." (January 17, 1997, letter from Khizar Wasti, Director, Division of Health Hazards Control, VDH to Alan Anthony, Director, Water Research & Standards, DEQ).

PCBs are a group of man-made industrial chemicals that exist as a mixture and may contain up to 209 individual compounds. Since 1977, PCBs have not been produced in the U.S., but are still found in the environment. PCBs were once widely used as coolants and lubricants in transformers, capacitors and other electrical equipment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Roanoke, Roanoke, City of

STREAM NAME: Ore Branch

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L04R_ORE01A00

SEGMENT SIZE: 2.42 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2001 - 2006

UPSTREAM LIMIT:

DESCRIPTION: Headwaters in Hunting Hills.

RIVER MILE: 2.42

LATITUDE: 37.21750 **LONGTITUDE:** -79.96667

DOWNSTREAM LIMIT:

DESCRIPTION: Ore Br. mouth on Roanoke R.

RIVER MILE: 0.00

LATITUDE: 37.25528 **LONGTITUDE:** -79.95056

The segment extends from its headwaters downstream to the mouth of Ore Branch on the Roanoke River. The segment spans the Garden City and Roanoke Quads.

Note: 1998 segment mileage length has been adjusted to reflect the use of the National Hydrography Dataset (NHD).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Fecal coliform bacteria as assessed in 1996 caused the segment to only partially meet the swimming use. The 1996 303(d) Listing was based on two of 5 samples exceeding the fecal coliform bacteria 1000 n/100 ml criterion for the two year data window in 1996. The impaired listing was continued in 1998.

Station 4AORE000.019 was discontinued in May,1994 and has since been reactivated. Three sample collections are within the 2002 assessment window. None exceed the fecal coliform bacteria criterion, however the segment will remain 303(d) listed due to insufficient data to delist the segment. Monitoring should continue until sufficient data are collected to either continue the impaired listing or delist the segment.

IMPAIRMENT SOURCE NPS - Urban

The source of the impairment is believed to be urban nonpoint source pollution.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Roanoke County, Salem, Roanoke, Cities of

STREAM NAME: Peters Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L04R_PEE01A02

SEGMENT SIZE: 7.17 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Peters Cr. Headwaters

RIVER MILE: 7.17

LATITUDE: 37.34722 **LONGTITUDE:** -80.03000

DOWNSTREAM LIMIT:

DESCRIPTION: Peters Cr. mouth on the Roanoke R.

RIVER MILE: 0.00

LATITUDE: 37.27306 **LONGTITUDE:** -79.99278

The segment begins in the headwaters of Peters Creek (Salem Quad) extending downstream to the Peters Creek confluence on the Roanoke River (Roanoke Quad).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform - 7.17 miles

Swimming Use
A special study (SS 975101) station 4APEE001.04 (SS 975101) found exceedances of the fecal coliform bacteria geometric mean criterion of 200 n/100 ml in two of three calculations derived from the special study data. Only one exceedance from seven collections exceeded the instantaneous fecal coliform bacteria 1000 n/100 ml criterion.

Ambient program water samples found only one exceedance of the instantaneous criterion from 23 samples collected at 4APEE001.04. The swimming use is not supported for 7.17 miles in this segment based on the exceedance of the fecal coliform geometric mean criterion.

Station 4APEE001.04 is located at the Shenandoah Avenue Bridge crossing Peters Creek. A portion of the overall segment is fully supporting, but threatened for both the aquatic life and fish consumption uses for 2.53 miles. The 'Threatened' segment extends from the Peters Creek confluence with the Roanoke River upstream 2.53 miles as described below.

Aquatic Life Use
A 1999 sediment collection exceeds the 1995 NOAA effect range median (ER-M) sediment screening value (SV) in parts per billion for chlorodane at 17.04 ppb. The SV for chlorodane is 6.0 ppb. Pyrene (SV= 2600 ppb), benzo(a) pyrene (SV=1600 ppb), benz(a) anthracene (SV=1600 ppb) and dibenz(a,h) anthracene (SV= 260) are each in excess of their respective SVs. Values are pyrene 3989.83, benzo(a) pyrene 2002.57, benz(a) anthracene 1696.19 and dibenz(a,h) anthracene 542.96. The aquatic life use is 'Threatened' for 2.53

miles.

Fish Consumption Use
Fish tissue collections at 4APEE001.04 found polychlorinated biphenyls (PCBs) in excess of the human health-risk carcinogenic screening value (SV) of 54 parts per billion (ppb) from one species; Rock Bass @ 68.2 ppb. The fish consumption use is therefore 'Threatened' for 2.53 miles based on these results.

IMPAIRMENT SOURCE NPS - Urban

Swimming Use
The source of the fecal coliform bacteria is believed to be urban nonpoint source pollution.

Aquatic Life Use
The source of sediment exceedances are unknown.

Fish Consumption Use
The exact source of the PCB contamination is unknown.

The Virginia Department of Health (VDH) action level for PCBs is 600 ppb in fish tissue. The VDH review of the 1993 study by the Toxic Substances Program reports ". . . that none of the contaminants, at reported concentrations, poses an imminent threat to human health from consuming fish." (January 17, 1997, letter from Khizar Wasti, Director, Division of Health Hazards Control, VDH to Alan Anthony, Director, Water Research & Standards, DEQ).

PCBs are a group of man-made industrial chemicals that exist as a mixture and may contain up to 209 individual compounds. Since 1977, PCBs have not been produced in the U.S., but are still found in the environment. PCBs were once widely used as coolants and lubricants in transformers, capacitors and other electrical equipment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Roanoke, Roanoke, City of

STREAM NAME: Roanoke River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L04R_ROA02A00

SEGMENT SIZE: 4.14 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2001 - 2006

UPSTREAM LIMIT:

DESCRIPTION: Backwaters of the Niagara Impoundment

RIVER MILE: 199.14

LATITUDE: 37.25889 **LONGTITUDE:** -79.88714

DOWNSTREAM LIMIT:

DESCRIPTION: Back Cr. mouth on the Roanoke R.

RIVER MILE: 195.0

LATITUDE: 37.22528 **LONGTITUDE:** -79.84737

The upper limit of the segment is the backwaters of the Niagara Impoundment (river mile 199.14) extending downstream to the confluence of Back Creek on the Roanoke River (river mile 195.00).

Note: Additional impaired parameters cause the 1998 fecal coliform/benthic listed segment to be modified with the 2002 Impaired Waters listing.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting, Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, Fish Tissue - PCBs

Swimming Use

The swimming use is impaired based on fecal coliform bacteria data collected at two sites. Fifteen of 59 samples exceed the 1000 n/100 ml fecal coliform criterion at station 4AROA202.20 (not supporting). A downstream station 4AROA196.05 at McVeigh Ford located in Watershed (VAW-L12L) records fecal coliform bacteria exceedances in five of 23 samples (partially supporting). Station 4ABAA002.61 on Back Creek records only one exceedance from 23 samples. Back Creek enters the Roanoke River upstream of the McVeigh Ford station.

Fish Consumption Use

The fish consumption use is only partially supporting based on fish tissue exceedances of the EPA human health-risk based carcinogenic screening value (SV) of 54 ppb for polychlorinated biphenyls (PCBs). Stations 4AROA199.60 (Above Niagara Dam), 4AROA199.20 (Blue Ridge Parkway Bridge - Niagara) and a downstream station 4AROA196.05 (McVeigh Ford) in watershed VAW-L12L record values in excess of the SV.

A Level 2 fish tissue study (1993 Roanoke River Basin Study, DEQ, Water Research & Standards, Richmond, Virginia) found polychlorinated biphenyls (PCBs) in four of four species 4AROA199.20. Analysis of 40 fish provides the following results in ppb: Smallmouth Bass (237 max.), Redbreast Sunfish (80.1 max.), Redhorse

Sucker (317.7 max.) and Carp (617.6 max.). Chlorodane was also found in Carp tissue (93.9 max.). The EPA carcinogenic SV for chlorodane is 310 ppb.

Station 4AROA199.60 reports PCB values for three species from 1999 collections. They are: Largemouth Bass 272, Redhorse Sucker 101, and Carp 489 ppb. PCB sediment collections at the site record a single value of 133 ppb, not in excess of the 1995 NOAA ER-M SV of 180.

Station 4AROA196.05-TL records 1999 values in excess of the fish tissue PCB SV for four species: Largemouth Bass @ 73.7, Carp @ 124, Gizzard Shad @ 386 and Redhorse Sucker @ 89.9 ppb.

This fact sheet describes a 4.14 mile riverine portion of the total partially supporting fish consumption use impairment. The entire impairment extends from Dixie Caverns - VAW-L03R (37°15'07" / 080°10'20") on downstream through watershed VAW-L04R into Smith Mountain Lake VAW-L12L (37°13'57" / 079°50'51") ~1 mile below the Hales Ford Bridge. The total mileage for the fish consumption impairment is 50.01 miles or 28.35 Roanoke River miles and 3249 lake acres.

There is no Virginia Department of Health (VDH) Advisory. Fish tissue concentrations are below the VDH 600 ppb level of concern. Information on the fish tissue sampling program can be viewed at http://www.deq.state.va.us

Aquatic Life Use
The aquatic life use is 'Threatened' based on sediment data from two sites. Station 4AROA202.20 records 50 and station 4AROA199.60 (Niagara Impoundment) finds 26.86 ppb (parts per billion) in the sediment for chlorodane. The 1995 NOAA effect range median (ER-M) chlorodane screening value (SV) is 6 ppb. DDT (SV= 7 ppb) also is in excess of the SV at 8.19 ppb.

IMPAIRMENT SOURCE NPS - Urban, Unknown

Swimming Use
The source of the fecal coliform bacteria is believed to be from nonpoint source runoff in the urban area. The Roanoke Regional WPCP reached hydraulic capacity in 1985. At that point it began improving the collection system that transports wastewater to the plant. A new interceptor along the Roanoke River is complete with other improvements to the system along Tinker Creek also completed.

Aquatic Life Use
Benthic impairments are believed due to urban nonpoint source runoff and sedimentation as a result of interceptor replacement along the Roanoke R.

The source of the sediment chlorodane exceedance is unknown.

Fish Consumption Use
The exact sources of the PCB and chlorodane contamination are unknown.

The Virginia Department of Health (VDH) action level for PCBs is 600 ppb in fish tissue. The VDH review of the 1993 study by the Toxic Substances Program reports ". . . that none of the contaminants, at reported concentrations, poses an imminent threat to human health from consuming fish." (January 17, 1997, letter from Khizar Wasti, Director, Division of Health Hazards Control, VDH to Alan Anthony, Director, Water Research & Standards, DEQ).

PCBs are a group of man-made industrial chemicals that exist as a mixture and may contain up to 209 individual compounds. Since 1977, PCBs have not been produced in the U.S., but are still found in the environment. PCBs were once widely used as coolants and lubricants in transformers, capacitors and other electrical equipment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Roanoke, Roanoke, City of

STREAM NAME: Roanoke River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L04R_ROA05A00

SEGMENT SIZE: 1.46 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2001 - 2006

UPSTREAM LIMIT:

DESCRIPTION: Roanoke R. at the Roanoke Regional STP outfall

RIVER MILE: 200.60

LATITUDE: 37.26667 **LONGTITUDE:** -79.91083

DOWNSTREAM LIMIT:

DESCRIPTION: Backwaters of the Niagara Impoundment

RIVER MILE: 199.14

LATITUDE: 37.25889 **LONGTITUDE:** -79.88714

The upper limit of the segment is the Roanoke Regional STP (river mile 200.60 outfall extending downstream to the backwaters of the Niagara Impoundment at river mile 199.14. The entire segment is on the Roanoke Quad.

Note: Additional impaired parameters cause the 1998 fecal coliform/benthic listed segment to be modified with the 2002 Impaired Waters listing.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting, Aquatic Life Use - Partially Supporting, Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, General Standard (Benthic), Fish Tissue - PCBs / Organics in sediment

Swimming Use
The swimming use is impaired based on fecal coliform bacteria data collected at two sites. Fifteen of 59 samples exceed the 1000 n/100 ml fecal coliform criterion at station 4AROA202.20 (not supporting). A downstream station 4AROA196.05 at McVeigh Ford located in Watershed (VAW-L12L) records fecal coliform bacteria exceedances in five of 23 samples (partially supporting). Station 4ABAA002.61 on Back Creek records only one exceedance from 23 samples. Back Creek enters the Roanoke River upstream of the McVeigh Ford station.

Aquatic Life Use
The aquatic life use is only partially supported for 1.46 miles; from the Roanoke Regional STP outfall downstream to the backwaters of the Niagara Impoundment. The impairment is based on biological monitoring at three sites 4AROA202.20 (14th Street Bridge - above the Roanoke Regional STP), 4AROA205.67 (Rivers Edge Park below Franklin Rd. Br.), 4AROA206.03 (Smith Park) and 4AROA206.95 (Wasena Park). Each site reports the benthic community as moderately impaired.

Station 4AROA202.20 (five surveys) finds in a fall 2000 survey, the dominant family (40% of total individuals) are the pollution tolerant midge larvae, family Chironomidae. Less than 4% of all individuals collected were mayflies and approximately 50% of stream substrate was covered with heavy growths of filamentous algae. Stations 4AROA205.67 and 4AROA206.03 both report moderate impairment from a total of four surveys. Six surveys at 4AROA206.95 also find moderate impairment. The entire General Standard (Benthic) impairment extends from the mouth of Mason Creek (VAW-L03R) downstream to the backwaters of the Niagara Impoundment (VAW-L04R), a total of 11.33 miles.

The aquatic life use is also 'Threatened' based on sediment data from two sites. Station 4AROA202.20 records 50 and station 4AROA199.60 (Niagara Impoundment) finds 26.86 ppb (parts per billion) in the sediment for chlorodane. The 1995 NOAA effect range median (ER-M) chlorodane screening value (SV) is 6 ppb. DDT (SV= 7 ppb) also is in excess of the SV at 8.19 ppb.

Fish Consumption Use
The fish consumption use is only partially supporting based on fish tissue exceedances of the EPA human health-risk based carcinogenic screening value (SV) of 54 ppb for polychlorinated biphenyls (PCBs). Stations 4AROA199.60 (Above Niagara Dam), 4AROA199.20 (Blue Ridge Parkway Bridge - Niagara) and a downstream station 4AROA196.05 (McVeigh Ford) in watershed VAW-L12L record values in excess of the SV.

A Level 2 fish tissue study (1993 Roanoke River Basin Study, DEQ, Water Research & Standards, Richmond, Virginia) found polychlorinated biphenyls (PCBs) in four of four species 4AROA199.20. Analysis of 40 fish provides the following results in ppb: Smallmouth Bass (237 max.), Redbreast Sunfish (80.1 max.), Redhorse Sucker (317.7 max.) and Carp (617.6 max.). Chlorodane was also found in Carp tissue (93.9 max.). The EPA carcinogenic SV for chlorodane is 310 ppb.

Station 4AROA199.60 reports PCB values for three species from 1999 collections. They are: Largemouth Bass 272, Redhorse Sucker 101, and Carp 489 ppb. PCB sediment collections at the site record a single value of 133 ppb, not in excess of the 1995 NOAA ER-M SV of 180.

Station 4AROA196.05-TL records 1999 values in excess of the fish tissue PCB SV for four species: Largemouth Bass @ 73.7, Carp @ 124, Gizzard Shad @ 386 and Redhorse Sucker @ 89.9 ppb.

This fact sheet describes a riverine portion (1.46 miles) of the total partially supporting fish consumption use impairment (28.35). The entire impairment extends from near Dixie Caverns - VAW-L03R (37°15'07" / 080°10'20") on downstream through watershed VAW-L04R into Smith Mountain Lake VAW-L12L (37°13'57" / 079°50'51") ~1 mile below the Hales Ford Bridge. The total mileage for the fish consumption impairment is 50.01 miles or 28.35 Roanoke River miles and 3249 lake acres.

There is no Virginia Department of Health (VDH) Advisory. Fish tissue concentrations are below the VDH 600 ppb level of concern. Information on the fish tissue sampling program can be viewed at http://www.deq.state.va.us

IMPAIRMENT SOURCE NPS - Urban, NPS - Urban, Unknown

Swimming Use
The source of the fecal coliform bacteria is believed to be from nonpoint source runoff in the urban area. The Roanoke Regional WPCP reached hydraulic capacity in 1985. At that point it began improving the collection system that transports wastewater to the plant. A new interceptor along the Roanoke River is complete with other improvements to the system along Tinker Creek also completed.

Aquatic Life Use
Benthic impairments are believed due to urban nonpoint source runoff and sedimentation as a result of interceptor replacement along the Roanoke R.

The source of the sediment chlorodane exceedance is unknown.

Fish Consumption Use
The exact sources of the PCB and chlorodane contamination are unknown.

The Virginia Department of Health (VDH) action level for PCBs is 600 ppb in fish tissue. The VDH review of the 1993 study by the Toxic Substances Program reports ". . . that none of the contaminants, at reported

concentrations, poses an imminent threat to human health from consuming fish." (January 17, 1997, letter from Khizar Wasti, Director, Division of Health Hazards Control, VDH to Alan Anthony, Director, Water Research & Standards, DEQ).

PCBs are a group of man-made industrial chemicals that exist as a mixture and may contain up to 209 individual compounds. Since 1977, PCBs have not been produced in the U.S., but are still found in the environment. PCBs were once widely used as coolants and lubricants in transformers, capacitors and other electrical equipment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Salem, Roanoke, Cities of

STREAM NAME: Roanoke River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L04R_ROA08A00

SEGMENT SIZE: 9.87 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2006

UPSTREAM LIMIT:

DESCRIPTION: Confluence of Mason Cr. on the Roanoke R.

RIVER MILE: 210.47

LATITUDE: 37.23722 **LONGTITUDE:** -80.21395

DOWNSTREAM LIMIT:

DESCRIPTION: Roanoke Regional STP outfall on the Roanoke R.

RIVER MILE: 200.60

LATITUDE: 37.26667 **LONGTITUDE:** -79.91083

The segment begins at the Mason Creek mouth on the Roanoke (river mile 210.47 on the Salem Quad) and extends downstream to the Roanoke Regional Water Pollution Control Plant at river mile 200.60 (Roanoke Quad).

Note: Additional impaired parameters cause the 1998 fecal coliform/benthic listed segment to be modified with the 2002 Impaired Waters listing.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially / Not Supporting, Aquatic Life Use - Partially Supporting, Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, General Standard (Benthic), Fish Tissue - PCBs

Monitoring station locations are: 4AROA219.99 (Rt. 612 Bridge - at Wabum), 4AROA216.33 Roanoke R., (Salem, Below Koppers downstream of Rts. 760 & 639 junction), 4AROA212.17 (Riverside Drive - Rt. 11 Bridge nearest Rt. 419), 4AROA206.03 (Smith Park), 4AROA205.67 (Riversedge Park - Below Franklin Rd. Br.) and 4AROA202.20 (14th Street Bridge - above STP).

Swimming Use
The basis of the swimming use impairment are data collected from two sites along the Roanoke River. Station 4AROA212.17 records six exceedances of the fecal coliform bacteria criterion of 1000 n/100 ml from 59 samples (Partial Support). Fifteen of 59 samples exceed the criterion at station 4AROA202.20 (Not Supporting). The 1998 impaired swimming use segment now extends from the Big Bear Branch mouth (37°16'07" / 080°07'42") on the Roanoke River downstream to the Ronaoke Regional STP outfall. A total of 17.13 miles.

Aquatic Life Use
The aquatic life use is only partially supported based on biological monitoring at three sites 4AROA206.03, 4AROA205.67 and 4AROA202.20. Each site reports the benthic community as moderately impaired.

Station 4AROA202.20 (five surveys) finds in a fall 2000 survey, the dominant family (40% of total individuals) are the pollution tolerant midge larvae, family Chironomidae. Less than 4% of all individuals collected were mayflies and approximately 50% of stream substrate was covered with heavy growths of filamentous algae. Stations 4AROA205.67 and 4AROA206.03 both report moderate impairment from a total of four surveys. Six surveys at 4AROA206.95 also find moderate impairment. The WQS General Standard (Benthic) is contravened for 9.87 miles in this segment based on these data. The entire General Standard (Benthic) impairment extends from the mouth of Mason Creek (VAW-L03R) downstream to the backwaters of the Niagara Impoundment (VAW-L04R), a total of 11.33 miles.

The segment is also fully supporting, but threatened for the aquatic life use. Station 4A212.17 notes a 1999 exceedance of the 1995 NOAA effect range- median (ER-M) sediment screening value for chlorodane (SV=6.0 ppb) at 10 ppb. Station 4AROA202.20 records 50 ppb for chlorodane. Station 4AROA216.33 finds a 1999 exceedance of DDT (SV= 7) at 11.28 ppb. The entire aquatic life use 'Threatened' segment is a total of 17.13 miles.

Fish Consumption Use
The waters only partially support the fish consumption use due to exceedance of the human health-risk carcinogenic screening value (SV) of 54 parts per billion (ppb) for polychlorinated biphenyls (PCBs). A Tier 2 fish tissue study (1993 Roanoke River Basin Study DEQ, Water Research & Standards, Richmond, Virginia) found PCBs in excess of the SV from one species; Bluehead Chub (87.9 max.) at 4AROA219.99. The maximum was recorded in one fish from nine total fish collected for the species. A total of 39 fish were collected. Other species were: Smallmouth Bass, Rock Bass, Redbrest Sunfish and Redhorse Sucker. All were below the SV.

1999 fish tissue collections at Station 4AROA216.33 found PCBs in excess of the SV from one species; Carp @192 ppb. 4AROA206.80 records PCB in tissue from one species; Rock Bass @130 ppb. Monitoring of fish tissue and sediment should continue.

This fact sheet describes a riverine portion (9.87 miles) of the total partially supporting fish consumption use impairment (28.35 miles). The impairment extends from Dixie Caverns in VAW-L03R (37°15'07" / 080°10'20") on downstream through watershed VAW-L04R into Smith Mountain Lake VAW-L12L (37°13'57" / 079°50'51") ~1 mile below the Hales Ford Bridge. The total mileage for the fish consumption impairment is 50.01 miles or 28.35 Roanoke River miles and 3249 lake acres.

There is no Virginia Department of Health (VDH) Advisory. Fish tissue concentrations are below the VDH 600 ppb level of concern. Information on the fish tissue sampling program can be viewed at http://www.deq.state.va.us.

IMPAIRMENT SOURCE NPS - Urban, Natural / NPS Urban, Unknown

Swimming Use
The source of the fecal coliform bacteria is believed to be from nonpoint source runoff in the urban area. The Roanoke Regional WPCP reached hydraulic capacity in 1985. At that point it began improving the collection system that transports wastewater to the plant. A new interceptor along the Roanoke River is complete with other improvements to the system along Tinker Creek also completed.

Aquatic Life Use
Benthic impairments are believed due to urban nonpoint source runoff and sedimentation as a result of interceptor replacement along the Roanoke R.

The source of the sediment chlorodane exceedance is unknown.

Fish Consumption Use
The exact sources of the PCB contamination are unknown.

The Virginia Department of Health (VDH) action level for PCBs is 600 ppb in fish tissue. PCBs are a group of man-made chemicals that can contain up to 209 individual compounds. The Virginia Department of Health (VDH) review of the 1993 study by the Toxic Substances Program reports ". . . that none of the contaminants, at reported concentrations, poses an imminent threat to human health from consuming fish." (January 17, 1997, letter from Khizar Wasti, Director, Division of Health Hazards Control, VDH to Alan Anthony, Director, Water Research & Standards, DEQ).

PCBs are a group of man-made industrial chemicals that exist as a mixture and may contain up to 209 individual compounds. Since 1977, PCBs have not been produced in the U.S., but are still found in the environment. PCBs were once widely used as coolants and lubricants in transformers, capacitors and other electrical equipment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Roanoke, Salem, City of

STREAM NAME: Mason Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L04R_MSN01A00

SEGMENT SIZE: 7.61 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Near the Mason Cove community.

RIVER MILE: 7.61

LATITUDE: 37.37306 **LONGTITUDE:** -80.08250

DOWNSTREAM LIMIT:

DESCRIPTION: Mason Cr. mouth on the Roanoke R.

RIVER MILE: 0.00

LATITUDE: 37.26944 **LONGTITUDE:** -80.02444

The segment begins near the Mason Cove Community, river mile 7.61 and extends downstream to the mouth of Mason Creek on the Roanoke River. The entire segment is on the Salem Quad.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

The following are locations of the stations discussed below: 4AMSN000.60 (Near A.R. Burton Tech.), 4AMSN000.67 (Boulevard), 4AMSN002.36 (East Main St.-Rt. 460/11), 4AMSN003.36 (Garst St), 4AMSN006.92 (Carvin Cove Rd-Rt. 604), and 4AMSN012.62 (Bradshaw Rd-Rt. 622).

Swimming Use
A special study (SS 975101) found exceedances of the fecal coliform bacteria geometric mean criterion of 200 n/100 ml at four of five stations on Mason Creek. Stations 4AMSN000.67, 4AMSN002.36, 4AMSN003.36 and 4AMSN006.92 each exceed the criterion in three of three calculations derived from the special study data. Exceedances of the instantaneous fecal coliform bacteria criterion of 1000 n/100 ml occur at all but station 4AMSN002.36. Station 4AMSN012.62 had no exceedances of either fecal coliform bacteria criteria. The waters as described above therefore do not support the swimming goal of the CWA.

Aquatic Life Use
The segment is also fully supporting, but threatened for the aquatic life use. Station 4AMSN000.60 finds a 1999 exceedance of the 1995 NOAA effect range- median (ER-M) sediment screening value (SV) in parts per billion for pyrene (SV= 2600 ppb) and dibenz(ah) anthracene (SV= 260 ppb). The station reports values of 3029.81 for pyrene and 291.96 for dibenz(ah) anthracene. The waters are 'Threatened' as a result.

IMPAIRMENT SOURCE NPS - Urban, Unknown

Swimming Use

Urban nonpoint source runoff is the primary source of the fecal coliform bacteria impairment.

Aquatic Life Use
The source(s) of organic exceedances are unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Roanoke, Botetourt

STREAM NAME: Glade Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L05R_GLA04A00

SEGMENT SIZE: 12.61 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2004

UPSTREAM LIMIT:

DESCRIPTION: Glade Cr. headwaters in Botetourt County.

RIVER MILE: 12.61

LATITUDE: 37.39750 **LONGTITUDE:** -79.81741

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth of Glade Cr. on Tinker Cr.

RIVER MILE: 0.00

LATITUDE: 37.27694 **LONGTITUDE:** -79.90896

The segment begins in the Glade Creek headwaters on the Stewartsville Quad and extends downstream to its confluence with Tinker Creek at river mile 0.83. The segment ends on the Roanoke Quad.

Note: The 1998 segment has been expanded to include the Glade Creek headwaters.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Aquatic Life Use - Not Supporting, Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Temperature - 6.86 miles, Fecal Coliform

Swimming Use
Nonsupport of the swimming use is found from 1997 special study data (SS 975101). Special Study stations are:

4AGLA000.20 - Walnut Avenue Bridge - Vinton
4AGLA001.60 - Berkeley Rd (Rt. 653)
4AGLA004.39 - Layman Rd (Rt. 606)
4AGLA005.75 - Webster Rd (Rt. 738)
4AGLA008.10 - Rt. 723

Stations 4AGLA000.20 (four of seven samples), 4AGLA001.60 (two of seven), 4AGLA004.39 (four of seven) and 4AGLA005.75 (three of seven) all exceed the 1000 n/100 ml fecal coliform bacteria instantaneous criterion. Only one exceedance from six samples occur at station 4AGLA008.10.

Stations 4AGLA000.20, 4AGLA001.60, 4AGLA004.39 and 4AGLA005.75 each exceed the 200 n/100 ml geometric mean for fecal coliform bacteria in two of two calculations derived from the special study data. Station 4AGLA008.10 exceeds the geometric mean in one of two calculations.

Aquatic Life Use
Three of seven measurements exceed the WQS designated natural trout water (Class VI) 20 °C criterion at 4AGLA008.10 (SS 975101). Temperature exceedances occur in the months of June (20.7°C), July (21.7°C) and August (21.8°C). Based on these data the upper portion of the segment does not support the aquatic life use. The 6.86 mile segment lies in the upper portion of the Glade Creek mainstem. The segment extends from the mouth of Coyner Spring Branch upstream to the Glade Creek headwaters. A separate Part 1C (Natural) fact sheet describes the segment.

The aquatic life use is also 'Threatened' from citizen benthic collections at 4AGLA-SOS. Citizen findings reveal a moderate probability for adverse conditions in a 0.96 mile portion that extends from the Norfolk Southern Railway tracks (37°17'00.48" / 079°53'47.48") downstream to the Glade Creek confluence with Tinker Creek.

IMPAIRMENT SOURCE Natural, NPS - Urban

Swimming Use
The source of the fecal coliform bacteria impairment is believed to be primarily urban nonpoint source runoff.

Aquatic Life Use
The source of the temperature exceedances are believed to be naturally occuring from solar radiation.

Threatened benthic conditions are unknown until confirmation of the threatened status is conducted. However urban nonpoint source runoff is the likely source.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Roanoke, Roanoke, City of

STREAM NAME: Carvin Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L05R_CRV02A00

SEGMENT SIZE: 5.35 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Upstream of I-81, at an unnamed tributary.

RIVER MILE: 5.35

LATITUDE: 37.36333 **LONGTITUDE:** -79.95224

DOWNSTREAM LIMIT:

DESCRIPTION: Carvin Cr. mouth on Tinker Cr.

RIVER MILE: 0.00

LATITUDE: 37.31944 **LONGTITUDE:** -79.92952

The segment begins just upstream of I-81 at the mouth of an unnamed tributary and extends downstream to the mouth of Carvin Creek on Tinker Creek. The entire segment is on the Roanoke Quad.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

A 1997 special study station, 4ACRV000.28 (Plantation Rd (Rt. 115), found exceedances of the 200 n/100 ml fecal coliform bacteria geometric mean criterion in two of two calculations derived from special study data (SS 975101). Exceedance of the instantaneous 1000 n/100 ml criterion occurs in two of the seven collections. The segment does not support the swimming use.

IMPAIRMENT SOURCE NPS - Urban/Residential

Urban nonpoint source runoff is the source of the impairment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Botetourt

STREAM NAME: Laymantown Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L05R_LAY01A00

SEGMENT SIZE: 2.08 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Upstream of Rt. 657 at pond.

RIVER MILE: 2.08

LATITUDE: 37.36194 **LONGTITUDE:** -79.85047

DOWNSTREAM LIMIT:

DESCRIPTION: Laymantown Cr. mouth on Glade Cr.

RIVER MILE: 0.00

LATITUDE: 37.33667 **LONGTITUDE:** -79.85654

The segment begins just upstream of the Rt. 657 Bridge at a small pond. The segment ends at the mouth of Laymantown Creek on Glade Creek. The entire segment is on the Stewartsville Quad.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

A 1997 special study station 4ALAY000.37 (Rt. 460 Bridge - near Blue Ridge) found exceedances of the fecal coliform bacteria geometric mean criterion of 200 n/100 ml in two of two calculations derived from the special study data (SS 975101). A total of seven samples were collected, none exceed the instantaneous criterion of 1000 n/100 ml. The swimming use is not supported in this segment.

IMPAIRMENT SOURCE NPS - Urban/Residential

Urban nonpoint source runoff is believed to be the source of the impairment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Roanoke, Botetourt, Roanoke, City of

STREAM NAME: Tinker Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L05R_TKR03A00

SEGMENT SIZE: 19.38 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2001 - 2004

UPSTREAM LIMIT:

DESCRIPTION: Tinker Cr. headwaters off Rt. 779

RIVER MILE: 19.38

LATITUDE: 37.44778 **LONGTITUDE:** -79.97250

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth of Tinker Cr. on the Roanoke R.

RIVER MILE: 0.00

LATITUDE: 37.26639 **LONGTITUDE:** -79.90500

The upper limit is off Rt. 779 near Mt. Union (Daleville Quad) in the headwaters of Tinker Creek. The downstream limit is at the confluence of Tinker Creek with the Roanoke River.

Note: Slight adjustments in 1998 segment mileage are due to the use of the National Hydrography Dataset (NHD).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting, Aquatic Life Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, Temperature - 11.90 miles

Swimming Use
The segment brackets station 4ATKR000.69 (Rt. 24 Bridge in Vinton). Exceedances of the fecal coliform bacteria instantaneous criterion of 1000 n/100 ml occur in 18 of 59 ambient samples.

The extent of the segment is further defined by a 1997 special study (SS 975101). These data confirm the continuation of 303(d) listing for fecal coliform bacteria. Special study stations are:

4ATKR000.69 - Rt. 24 Bridge - Vinton
4ATKR001.80 - Rt. 460
4ATKR002.96 - Mason Mill Rd
4ATKR004.04 - Old Mtn Rd (Rt. 605)
4ATKR005.68 - Hollins Rd (Rt. 601)
4ATKR009.30 - Rt. 11 Bridge - near Hollins
4ATKR012.28 - Rt. 816, Botetourt Co.
4ATKR015.88 - Off Rt. 779 - at Gage
4ATKR016.64 - Off Rt. 779, Botetourt Co.

Special Study station data exceed the WQS geometric mean criterion of 200 n/100 ml twice from two

calculations. Exceedances of the instantaneous fecal coliform bacteria criterion occur on more than one occasion at each station. Special Study station instantaneous criterion (1000 n/100 ml) exceedances / total observations and geometric mean criterion (200 n/100 ml) exceedances / total calculations are below:

4ATKR000.69 - 3 / 7 instant. geomean - 2 / 2 calcs.
4ATKR001.80 - 2 / 7 instant. geomean - 2 / 2 calcs.
4ATKR009.30 - 2 / 6 instant. geomean - 2 / 2 calcs.
4ATKR012.28 - 2 / 6 instant. geomean - 2 / 2 calcs.
4ATKR015.88 - 5 / 6 instant. geomean - 2 / 2 calcs.
4ATKR016.64 - 5 / 6 instant. geomean - 2 / 2 calcs.

Aquatic Life Use
Station 4ATKR000.69 (Rt. 24 Bridge) records seven exceedances of the 21°C temperature criterion from 59 ambient samples. The exceedances occur in the summer months of June, July and August from 1996-2000. This causes only partial support of the aquatic life use. The maximum temperature occurs in June of 1996 at 23.5 °C. 1997 special study data (SS 975101) from station 4ATKR005.68 records two exceedances from seven samples in this Class V stockable trout water. Both occur in July 1997 at 21.6 and 21.7 °C. The temperature segment extends 11.90 miles from the mouth of Tinker Creek on the Roanoke River upstream to the Rt. 11 Bridge in Cloverdale. The temperature impaired segment is also described in a separate Part 1C fact sheet.

This segment was 1998 Overlisted by the US EPA for temperature (Attachment A).

Total phosphorus values at special study station 4ATKR016.64 (SS975101) exceed the nutrient threshold of 0.20 mg/l in four of seven samples. Maxima values range from 0.22 to 0.42 mg/l. Thus 3.12 miles in the upper portion of Tinker Creek are 'Threatened' for the aquatic life use. The total phosphorus segment extends from the mainstem headwaters downstream to the Roanoke City diversion tunnel on Tinker Creek.

1995 NOAA sediment effect range-median (ER-M) screening values (SVs) measured in parts per million for metals and parts per billion (ppb) for organics are found in excess from 1996 (chlorodane) and 1999 sediment collections at 4ATKR000.69. An 11.90 mile segment is 'Threatened' for the aquatic life use as a result. Exceeding parameters, values and SVs are:

lead (Pb) - 244 - SV= 218 ppm
polychlorinated biphenyls (PCBs) - 941 - SV= 180 ppb
Total DDT - 86.3 - SV= 46.1 ppb
chlorodane - 84.6 (1996) and 18.1 (1999) - SV= 6 ppb
phenanthrene - 5071.73 - SV= 1500 ppb
antracene - 1593 - SV= 1100 ppb
benz(a) anthracene - 2464 - SV= 1600 ppb
dibenz(ah) anthracene - 327 - SV= 260 ppb
pyrene - 6061.68 (max.)- SV= 2600 ppb
benzo(a) pyrene - 1763 - SV= 1600 ppb

IMPAIRMENT SOURCE NPS - Agriculture/Urban, Natural

Swimming Use
The source of the fecal coliform bacteria impairment is believed to be urban nonpoint source pollution from the mouth of Tinker Creek upstream to approximately river mile 12.58 in Botetourt County (Daleville Quad) near the Roanoke Gas Company. Agricultural nonpoint source pollution is the believed source of impairment from approximately river mile 12.58 to the headwaters of Tinker Creek in Botetourt County.

Aquatic Life Use
The source of the temperature exceedances are believed to be from solar radiation. Exceedances were recorded in a largely urban drainage.

The source of the sediment metal and organics exceedances are unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Roanoke, City of

STREAM NAME: Lick Run

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L05R_LCK01A00

SEGMENT SIZE: 3.5 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2001 - 2004

UPSTREAM LIMIT:

DESCRIPTION: Near Shaffer's crossing rail yard.

RIVER MILE: 3.50

LATITUDE: 37.27889 **LONGTITUDE:** -79.96722

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth of Lick Run on Tinker Cr.

RIVER MILE: 0.00

LATITUDE: 37.27972 **LONGTITUDE:** -79.91861

The upper limit is near Shaffers Crossing rail yard and the downstream limit is the mouth of Lick Run on Tinker Creek at river mile 1.41. The entire segment is on the Roanoke Quad.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

The segment brackets an ambient and 1997 special study station at the Norfolk Southern parking lot bridge (4ALCK000.38). Fecal coliform bacteria exceed the instantaneous criterion of 1000 n/100 ml in nine of 26 samples based on ambient collections at 4ALCK000.38.

4ALCK000.38, special study data (SS 975101), reveals exceedances of the fecal coliform bacteria geometric mean criterion of 200 n/100 ml. Two of two calculations exceed the criterion as derived from special study data. The instantaneous criterion also exceeds in six of the seven samples. The segment to does not support the swimming use.

IMPAIRMENT SOURCE NPS - Urban

The source is urban nonpoint source runoff.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Bedford

STREAM NAME: Beaverdam Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L07R_BDA01A00

SEGMENT SIZE: 5.58 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2004 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Headwaters-end of perennial section

RIVER MILE: 8.30

LATITUDE: 37.26917 **LONGTITUDE:** -79.74972

DOWNSTREAM LIMIT:

DESCRIPTION: Beaverdam Cr. impounded waters

RIVER MILE: 2.72

LATITUDE: 37.21389 **LONGTITUDE:** -79.74972

The segment begins at the upstream limit of perennial stream in the headwaters and extends downstream to the impounded waters of Beaverdam Creek at river mile 2.78. The segment spans the Stewartsville, Irving, Goodview and Hardy Quads.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Exceedances of the fecal coliform bacteria instantaneous 1000 n/100 ml criterion are found at station 4ABDA003.63 (Off Rt. 757). Three of 23 samples exceed the criterion. This segment only partially supports the swimming use.

IMPAIRMENT SOURCE NPS - Agriculture/Urban

The source of fecal coliform bacteria is believed to be a mix of urban and agricultural nonpoint source runoff.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Franklin

STREAM NAME: Green Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L08R_GCR01A00

SEGMENT SIZE: 3.93 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2000 - 2004

UPSTREAM LIMIT:

DESCRIPTION: Perennial headwaters of Green Cr.

RIVER MILE: 3.93

LATITUDE: 37.10056 **LONGTITUDE:** -80.08551

DOWNSTREAM LIMIT:

DESCRIPTION: Green Cr. mouth on S.F. Blackwater R.

RIVER MILE: 0.00

LATITUDE: 37.05361 **LONGTITUDE:** -80.08492

Green Creek's perennial headwaters begin the segment that extends downstream to its mouth on the South Fork of Blackwater River. The entire segment is on the Callaway Quad.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting, Aquatic Life Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, Temperature

Swimming Use

The South Fork of the Blackwater River fecal coliform bacteria Total Maximum Daily Load (TMDL) Study and allocation scenarios are complete. Green Creek is tributary to the South Fork and is included in the TMDL Study and allocations. The segment is therefore delisted for fecal coliform with the US Environmental Protection Agency (EPA) approval of the study on 02/02/2001. Ultimately the TMDL Study and allocation scenarios will be incorporated into the 303(e) Water Quality Management Plans. The entirety of the approved study and allocations can be viewed at http://www.deq.state.va.us. The Draft Phase I Implementation Plan is complete and incorporates Green Creek.

The South Fork Blackwater River segment, originally 303(d) Listed in 1996, is based on a 319 funded special study (SS 925102) and ambient sample collections. Abundant fecal coliform bacteria counts failed to support the swimming use by exceedances of both the geometric mean (200 n/100 ml) and instantaneous criterion (1000 n/100 ml).

Only two additional fully supporting fecal coliform bacteria samples are available from the 2002 305(b) other than that supplied from the 319 funded special study (SS 925102). The swimming use remains impaired.

Aquatic Life Use

A separate Part 1C (Natural) fact sheet describes an aquatic life use impairment due to temperature excursions of the water quality standards (WQS) 20 °C Class VI natural trout water criterion. Two of 12 temperature measurements exceed the criterion causing only partial support of the aquatic life use at

4AGCR000.01 (Rt. 739 Bridge at Algoma, VA). The segment extends from Green Creek's perennial headwaters downstream to its mouth on the South Fork of Blackwater River at Algoma. The aquatic life use (temperature) impairment was not addressed by the EPA approved South Fork of the Blackwater River fecal coliform TMDL study.

IMPAIRMENT SOURCE NPS - Agriculture - 1998, Natural

Swimming Use
Bacteria source tracking utilized in the TMDL study demonstrates that wildlife is the dominant contributor of fecal coliform bacteria with agriculture second. Direct deposition at baseflow is the critical condition.

Aquatic Life Use
The source of temperature exceedances are believed to be from solar radiation. There are no known sources of heat that would contribute to the exceedances.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Franklin

STREAM NAME: Teels Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L08R_TEL01A00

SEGMENT SIZE: 4.6 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2000 - 2004

UPSTREAM LIMIT:

DESCRIPTION: Perennial headwaters of Teels Cr.

RIVER MILE: 4.60

LATITUDE: 37.09417 **LONGTITUDE:** -79.96687

DOWNSTREAM LIMIT:

DESCRIPTION: Teels Cr. mouth on Little Creek.

RIVER MILE: 0.00

LATITUDE: 37.05778 **LONGTITUDE:** -79.91817

The perennial headwaters of Teels Creek begin the segment that ends at the mouth of Teels Creek on Little Creek. The entire segment is on the Boones Mill Quad.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting, Aquatic Life Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, General Standard (Benthic)

Swimming Use
The Middle Blackwater River fecal coliform bacteria Total Maximum Daily Load (TMDL) Study and allocation scenario is complete. Teels Creek is tributary Little Creek then onto the Blackwater River and is included in the study. The segment is therefore delisted for fecal coliform with the US Environmental Protection Agency (EPA) approval of the Middle Blackwater Study on 12/04/2001. Ultimately the TMDL Study and allocation scenarios will be incorporated in the 303(e) Water Quality Management Plans. The entirety of the approved study and allocation can be viewed at http://www.deq.state.va.us. The Draft Phase I Implementation Plan is complete and incorporates Teels Creek.

Aquatic Life Use
The aquatic life use is only partially supported for 4.60 miles. The impairment is based on biological monitoring at 4ATEL001.02 from three Rapid Biological Protocol II (RBP II) surveys. Survey results for Spring 1999 and Fall 2000 report moderate impairment. The fall 2000 survey finds slight impairment and improving conditions, however, the waters only partially support the aquatic life use as an overall result of the surveys. The benthic impairment is a 2002 addition to this segment.

The Blackwater River segment, originally 303(d) Listed in 1996, is based on a 319 funded special study (SS 925102) and ambient sample collections. Abundant fecal coliform bacteria counts failed to support the swimming use by exceedances of both the geometric mean (200 n/100 ml) and instantaneous criteria (1000 n/100 ml).

Monitoring continues at 4ATEL001.02 (Rt. 697 Bridge) where 10 of 14 fecal coliform bacteria samples exceed the instantaneous criterion. The segment remains impaired for the swimming use.

IMPAIRMENT SOURCE NPS - Agriculture/Wildlife, NPS - Agriculture

Bacteria source tracking utilized in the TMDL study demonstrates that wildlife is the dominant contributor of fecal coliform bacteria with agriculture second. Direct deposition at baseflow is the critical condition.Aquatic Life Use

The believed source of the impairment is agricultural activity in the drainage.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Franklin

STREAM NAME: South Fork of the Blackwater River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L08R_BSF02A00

SEGMENT SIZE: 6.06 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 1999 - 2004

UPSTREAM LIMIT:

DESCRIPTION: Rt. 739 Bridge, Algoma

RIVER MILE: 6.06

LATITUDE: 37.05361 **LONGTITUDE:** -80.08492

DOWNSTREAM LIMIT:

DESCRIPTION: Confluence of North and South Forks

RIVER MILE: 0.00

LATITUDE: 37.02472 **LONGTITUDE:** -80.02676

The segment upper limit is the South Fork headwaters at Rt. 739 Bridge in Algoma, Va. on the Callaway Quad. The downstream limit is just west of the Rt. 641 Bridge where the North and South Forks join forming the Blackwater River.

Note: Slight changes in mileage are due to the use of the National Hydrography Dataset (NHD).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Swimming Use

The South Fork of the Blackwater River fecal coliform bacteria Total Maximum Daily Load (TMDL) Study and allocation scenarios are complete. The waters are therefore delisted for fecal coliform with the US Environmental Protection Agency (EPA) approval of the study on 02/02/2001. The study applies to the entire South Fork drainage. Ultimately the TMDL Study and allocation scenarios will be incorporated into the 303(e) Water Quality Management Plans. The entirety of the approved study and allocations can be viewed at http://www.deq.state.va.us. The Draft Phase I Implementation Plan is complete and incorporates the S.F. Blackwater River.

The segment, originally 303(d) Listed in 1996, is based on a 319 funded special study (SS 925102) and ambient sample collections. Abundant fecal coliform bacteria counts failed to support the swimming use by exceedances of both the geometric mean (200 n/100 ml) and instantaneous criteria (1000 n/100 ml).

Monitoring continues at station 4ABSF001.15 where eight of 14 samples exceed the instantaneous fecal coliform bacteria criterion. The segment does not support the swimming use.

Aquatic Life Use

A separate Part 1C (Natural) fact sheet describes excursions of the WQS Class V stockable trout water 21 °C

temperature criterion found in two of 14 measurements taken at 4ABSF001.15 (Rt. 641 Bridge east of Callaway). The exceedances occur in August 1999 (21.4 °C) and June 2000 (23.6 °C). The aquatic life use is only partially supporting as a result. The aquatic life use (temperature) impairment was not addressed by the EPA approved fecal coliform TMDL Study.

IMPAIRMENT SOURCE NPS - Agriculture/Wildlife

Swimming Use
Bacteria source tracking utilized in the TMDL study demonstrates that wildlife is the dominant contributor of fecal coliform bacteria with agriculture second. Direct deposition at baseflow is the critical condition.

Aquatic Life Use
The source of the temperature exceedances are believed to be from solar radiation.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Franklin

STREAM NAME: North Fork of the Blackwater River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L08R_BNR02A00

SEGMENT SIZE: 12.25 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 1999 - 2004

UPSTREAM LIMIT:

DESCRIPTION: Headwaters of the N.F. Blackwater R

RIVER MILE: 12.25

LATITUDE: 37.16278 **LONGTITUDE:** -80.05773

DOWNSTREAM LIMIT:

DESCRIPTION: Confluence of North and South Forks

RIVER MILE: 0.00

LATITUDE: 37.02472 **LONGTITUDE:** -80.02676

The segment begins approximately 12.25 miles upstream in the North Fork headwaters on the Bent Mt. Quad. The segment ends on the Callaway Quad at the North Fork's confluence with the South Fork at the head of the Blackwater River.

Note: Slight changes in mileage are due to the use of the National Hydrography Dataset (NHD).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting, Aquatic Life Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform - 12.25 mi., General Standard (Benthic) - 3.26 mi.

Swimming Use

The North Fork of the Blackwater River fecal coliform bacteria Total Maximum Daily Load (TMDL) Study and allocation scenarios are complete. The waters are therefore delisted for fecal coliform with the US Environmental Protection Agency (EPA) approval of the study on 03/09/2001. The TMDL Study applies to the entire North Fork drainage. Ultimately the TMDL Study and allocation scenarios will be incorporated into the 303(e) Water Quality Management Plans. The entirety of the approved study and allocations can be viewed at http://www.deq.state.va.us. The Draft Phase I Implementation Plan is complete and incorporates the N.F. Blackwater River.

The segment, originally 303(d) Listed in 1996, is based on a 319 funded special study (SS 925102) and ambient sample collections. Abundant fecal coliform bacteria counts failed to support the swimming use by exceedances of both the geometric mean (200 n/100 ml) and instantaneous criteria (1000 n/100 ml).

Monitoring continues at station 4ABNR000.40 where eight of 14 samples exceed the instantaneous fecal coliform bacteria criterion. The segment does not support the swimming use.

Aquatic Life Use

Contravention of the General Standard remains 303(d) listed as the benthic community is severely impacted

at 4ABNR000.40 and moderately impacted at 4ABNR001.53 from Rapid Biological Protocol II (RBP II) surveys. The aquatic life use is only partially supported in this segment as a result. The partially supported benthic community extends 3.26 miles upstream form the confluence of the North and South Forks of the Blackwater River.

The segment brackets biological stations at 4ABNR000.40 (Rt. 740 Bridge SW of Retreat, VA) and 4ABNR001.53 (Rt. 738 Bridge) single 2000 surveys at each station. Moderate impairment at 4ABNR000.40 has been reported in previous assessments. Several of the RBP II metrics indicates that the benthic community is composed mostly of pollution tolerant organisms and results in a severely impaired biological condition score (2000 single survey). 4ABNR001.53 reports moderate impairment from a single 2000 survey where the benthic community includes several pollution tolerant taxa with Chironomid midge fly larvae (tolerant of sediment and low dissolved oxygen) being the dominant organism The General Standard (benthic) impairment is not addressed in the EPA approved fecal coliform TMDL Study.

IMPAIRMENT SOURCE NPS - Agriculture/Wildlife, NPS - Agriculture

Swimming Use
Bacteria source tracking utilized in the TMDL study demonstrates that wildlife is the dominant contributor of fecal coliform bacteria with agriculture second. Direct deposition at baseflow is the critical condition.

Aquatic Life Use
The source of the General Standard (benthic) impairment is nonpoint source runoff from agricultural activity and stream bank modification.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Franklin

STREAM NAME: Little Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L08R_LLE03A00

SEGMENT SIZE: 7.61 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: West of the Helm community off Rt. 693.

RIVER MILE: 7.61

LATITUDE: 37.07667 **LONGTITUDE:** -79.96890

DOWNSTREAM LIMIT:

DESCRIPTION: Little Cr. mouth on the Blackwater R.

RIVER MILE: 0.00

LATITUDE: 37.04750 **LONGTITUDE:** -79.90941

The segment begins just west of Helm off Rt. 693 and extends to the Little Creek mouth on the Blackwater River. The entire segment is on the Boones Mill Quad.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting, Aquatic Life Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform - 1998, General Standard (Benthic) - 2002

Swimming Use
The Middle Blackwater River fecal coliform bacteria Total Maximum Daily Load (TMDL) Study and allocation scenarios are complete. Little Creek is tributary to the Blackwater River and is included in the TMDL Study. The segment is therefore delisted for fecal coliform with the US Environmental Protection Agency (EPA) approval of the Middle Blackwater Study on 12/04/2001. Ultimately the TMDL Study and allocation scenarios will be incorporated into the 303(e) Water Quality Management Plans. The entirety of the approved TMDL Study and allocations can be viewed at http://www.deq.state.va.us. The Draft Phase I Implementation Plan is complete and incorporates Little Creek.

The Blackwater River segment, originally 303(d) Listed in 1996, is based on a 319 funded special study (SS 925102) and ambient sample collections. Abundant fecal coliform bacteria counts failed to support the swimming use by exceedances of both the geometric mean (200 n/100 ml) and instantaneous criteria (1000 n/100 ml).

Monitoring continues at 4ALLE005.22 (Rt. 697 Bridge) where 10 of 14 fecal coliform bacteria samples exceed the instantaneous criterion. The segment remains impaired for the swimming use.

Aquatic Life Use
A biological Rapid Bioassessment Protocol II (RBPII) survey reports moderate impacts to the benthic community. The aquatic life use is only partially supported due to contravention of the General Standard for aquatic life. The General Standard (benthic) impairment is not addressed in the EPA approved Middle

Blackwater TMDL Study. The General Standard (Benthic) impairment is a 2002 303(d) Listing.

The aquatic life use is also fully supporting, but threatened based on excursions of the 0.20 mg/l total phosphorus threshold at 4ALLE005.22. Ambient data record five of 14 observations in excess of the threshold causing the 'Threatened' status. Exceedances occur in 1999 and 2000 with a maximum value of 0.36 mg/l in April 2000. Total phosphorus maxima range from 0.21 to 0.36 mg/l.

IMPAIRMENT SOURCE NPS - Agriculture/Wildlife, NPS - Agriculture

Swimming Use
Bacteria source tracking utilized in the TMDL study demonstrates that wildlife is the dominant contributor of fecal coliform bacteria with agriculture second. Direct deposition at baseflow is the critical condition.

Aquatic Life Use
Agricultural nonpoint source runoff is the believed source of the General Standard (benthic) impairment and total phosphorus excursions.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Franklin

STREAM NAME: Blackwater River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L08R_BWR05A00

SEGMENT SIZE: 39.7 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2000 - 2004

UPSTREAM LIMIT:

DESCRIPTION: Confluence of N.F./S.F. Blackwater R.

RIVER MILE: 60.16

LATITUDE: 37.02472 **LONGTITUDE:** -80.02676

DOWNSTREAM LIMIT:

DESCRIPTION: Backwaters of Smith Mountain Lake.

RIVER MILE: 20.46

LATITUDE: 37.06250 **LONGTITUDE:** -79.76962

The upstream limit of the segment is at the confluence of the North and South Forks of the Blackwater River (Callaway Quad). The segment's end is at the backwaters of Smith Mountain Lake. (Redwood Quad).

Note: Segment mileage changes are due to the use of the National Hydrogaphy Dataset (NHD) and combining three separate 1998 segments into one segment.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting, Aquatic Life Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, General Standard (Benthic) - 25.29 mi.

Swimming Use
Fecal coliform bacteria Total Maximum Daily Load (TMDL) Studies and allocation scenarios are complete for the Upper, Middle and Lower Blackwater River drainages. These studies incorporate tributary streams that lie within the boundaries of VAW-L08R and VAW-L10R. The waters are delisted for fecal coliform bacteria with the US Environmental Protection Agency (EPA) approval of the Upper Blackwater Study on 03/09/2001, the Middle on 12/04/2001 and the Lower on 04/27/2001. Ultimately the TMDL Study and allocation scenarios will be incorporated into the 303(e) Water Quality Management Plans. The entirety of the approved studies and allocations can be viewed at http://www.deq.state.va.us. Draft Implementation Plans for the North Fork, South Fork, Upper and Middle Blackwater River are complete and inclusive of tributary waters. Draft Phase I Implementation Plan development is the next step for the Lower Blackwater.

The Blackwater, originally 303(d) Listed in 1996 and again in 1998, is based on a 319 funded special study (SS 925102) and ambient sample collections. Abundant fecal coliform bacteria counts failed to support the swimming use by exceedances of both the geometric mean (200 n/100 ml) and instantaneous criterion (1000 n/100 ml).

Fecal coliform bacteria continue to exceed the instantaneous criterion at station 4ABWR061.20 (Rt. 641

Bridge) with 20 of 30 samples exceeding (not supporting). Station 4ABWR045.80 (Rt. 812 Bridge) continues to report 14 exceedances from 30 samples (not supporting) and station 4ABWR032.32 (Rt. 122 Bridge at the stream gaging station) reports criterion excursions in five of 14 samples (not supporting). Monitoring continues at station 4ABWR019.75 (Rt. 834 Bridge or Brooks Mill Bridge) where eight of 58 samples exceed (partial support). 4ABWR019.75 is located within watershed VAW-L10R.

Tributary ambient data from the North and South Forks of the Blackwater River, Little and Teels Creeks also report exceedances of the instantaneous fecal coliform bacteria criterion. Green Creek has only two additional fecal coliform bacteria collections beyond that gathered within the special study (SS 925102). Neither data point exceeds the criterion. However Green Creek remains 303(d) impaired. Tributary segments are described in separate Part 1A fact sheets.

Aquatic Life Use
The original 1996 General Standard benthic impairment was based on Green Creek (Blue Ridge) as a reference site. The reference site for the Blackwater River mainstem stations is now in the Pigg River drainage (transitional Blue Ridge to Piedmont). The Pigg River reference site is believed to more closely reflect conditions in the Blackwater River mainstem.

The original 1996 and 1998 303(d) Listed benthic impaired water extends from the confluence of the North and South Forks of the Blackwater River on downstream of the Rt. 921 Bridge approximately 1.3 miles at the confluence of an unnamed tributary (25.29 miles). Single 2000 Rapid Bioassessment Protocol II surveys (RBP II) at 4ABWR045.80 and 4ABWR049.73 report no impact to the benthic community in the 25.29 mile Blackwater River segment. However the segment remains impaired based on the 1998 303(d) listing.

A General Standard benthic TMDL Study is scheduled to begin in August 2002. Completion of the study will determine the degree of support or impairment and reference site selection for the Blackwater River. These waters remain 303(d) Listed for the General Standard (Benthic) until sufficient data support continued listing or delisting.

The aquatic life use is also 'Threatened' for 20.68 miles on the Blackwater River. Total phosphorus exceedances of the 0.20 mg/l threshold continue at 4ABWR054.81 (Rt. 734 Bridge, Franklin County). Three of 14 samples exceed at 0.82 (August 1999), 0.33 (April 2000) and 0.29 mg/l (August 2000). Exceedances also occur at 4ABWR045.80 (Rt. 812 Bridge). Five of 25 samples exceed the threshold where excursions range from 0.21 to 0.55 mg/l. The fully supporting, but threatened segment extends from the confluence of the North and South Forks of the Blackwater River downstream to the Town of Rocky Mount water intake on the Blackwater River.

IMPAIRMENT SOURCE NPS - Agriculture/Wildlife, NPS - Agriculture - 1998

Swimming Use
Direct deposition at baseflow is the critical condition in the Blackwater River. Bacteria source tracking utilized in the studies show wildlife as the dominant contributor of fecal coliform bacteria in the upper and middle portions of the drainage with agriculture second. The Lower Blackwater is more of a mix of land use activity and upstream contributions.

Aquatic Life Use
The 1998 source of the General Standard (Benthic) impairment is nonpoint source runoff from agricultural activity. The segment was 1998 listed and remains listed for General Standard (benthic) impairments. The Blackwater drainage lies both in the Blue Ridge and Piedmont ecoregions. Establishing reference sites that adequately represent the drainage have proven a difficult task.

The source of total phosphorus is believed to be contributions from agricultural activities.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Franklin

STREAM NAME: Mollie Branch

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L09R_MHA02A00

SEGMENT SIZE: 2.52 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Mollie Branch headwaters.

RIVER MILE: 2.52

LATITUDE: 37.07306 **LONGTITUDE:** -79.88228

DOWNSTREAM LIMIT:

DESCRIPTION: Mollie Branch mouth on Maggodee Cr.

RIVER MILE: 0.00

LATITUDE: 37.09278 **LONGTITUDE:** -79.85430

The segment begins in the headwaters of Mollie Branch and extends to its mouth on Maggodee Creek. The segment is on the Boones Mill and Redwood Quads.

Note: This segment is incorporated in the Maggodee Creek 1998 listed segment.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Swimming Use
The Maggodee Creek Fecal coliform bacteria Total Maximum Daily Load (TMDL) Study and allocation scenarios are complete. The study incorporates tributary streams that lie within the boundaries of watershed VAW-L09R. The waters are delisted for fecal coliform bacteria with the US Environmental Protection Agency (EPA) approval of the Maggodee Creek Study on 04/27/2001. The entirety of the approved study and allocations can be viewed at http://www.deq.state.va.us. Draft Phase I Implementation Plan development is the next step.

The Maggodee Creek segment, originally 303(d) Listed in 1996, is based on a 319 funded special study (SS 925102) and ambient sample collections. Abundant fecal coliform bacteria counts failed to support the swimming use by exceedances of both the geometric mean (200 n/100 ml) and instantaneous criteria (1000 n/100 ml).

Fecal coliform bacteria continue to exceed the instantaneous criterion at station 4AMHA000.01 (Off Rt. 687 at confluence/w Maggodee) with 10 of 12 samples exceeding (not supporting). Monitoring continues at station 4AMHA000.01.

Aquatic Life Use
An overlapping 0.76 mile segment is fully supporting, but threatened based on total phosphorus threshold

excursions at station 4AMHA000.01 (Off Rt. 687 at confluence with Maggodee). Two of 12 samples exceed the 0.20 mg/l total phosphorus threshold. Maxima are 0.37 (April 2000) and 0.54 mg/l (June 2000). The segment extends from the Mollie Creek mouth on Maggodee Creek upstream 0.76 miles. A separate Part 3 fact sheet describes this segment.

IMPAIRMENT SOURCE NPS - Agriculture/Wildlife

Swimming Use
Bacteria source tracking utilized in the TMDL study show agriculture and wildlife as the major contributors of fecal coliform bacteria in the Maggodee Creek drainage.

Aquatic Life Use
The source of the total phosphorus is believed to be mainly from agricultural nonpoint source runoff.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Franklin

STREAM NAME: Maggodee Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L09R_MEE05A00

SEGMENT SIZE: 20.21 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Rt. 613 Bridge

RIVER MILE: 20.21

LATITUDE: 37.14583 **LONGTITUDE:** -80.00995

DOWNSTREAM LIMIT:

DESCRIPTION: Maggodee Cr. mouth on Blackwater R.

RIVER MILE: 0.00

LATITUDE: 37.05194 **LONGTITUDE:** -79.82739

The upstream limit is Rt. 613 Bridge near the intersection with Rt. 726 where the North and South Forks of Maggodee Creek join. The downstream limit is at the mouth of Maggodee Creek on the Blackwater River.

Note: A slight segment mileage change is due to use of the National Hydrography Dataset (NHD).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting, Aquatic Life Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, General Standard (Benthic) - 7.38 mi.

Swimming Use

The Maggodee Creek Fecal coliform bacteria Total Maximum Daily Load (TMDL) Study and allocation scenario is complete. The study incorporates tributary streams that lie within the boundaries of watershed VAW-L09R. The waters originally 303(d) Listed in 1996 are now delisted for fecal coliform bacteria with the US Environmental Protection Agency (EPA) approval of the Maggodee Creek Study on 04/27/2001. The entirety of the approved study and allocations can be viewed at http://www.deq.state.va.us. Phase I Implementation Plan development is the next step.

Maggodee Creek was originally listed based on a 319 funded special study (SS 925102) and ambient sample collections. Abundant fecal coliform bacteria counts failed to support the swimming use by exceedances of both the geometric mean (200 n/100 ml) and instantaneous criteria (1000 n/100 ml).

Fecal coliform bacteria continue to cause nonattainment of the swimming use. Stations 4AMEE009.86 (Rt. 635 Bridge), 4AMEE007.85 (Rt. 687 Bridge above Mollie Br.), 4AMEE004.90 (Rt. 697 Bridge) and 4AMEE002.38 (Rt. 698 Ford) all record exceedances of the instantaneous criterion. The swimming use is not supported at three stations; seven of 14 samples exceed at 4AMEE009.86, five of 13 at 4AMEE007.85 and eight of 15 at 4AMEE004.90. Station 4AMEE002.38 records two of 14 exceedances (Partial Support).

Aquatic Life Use
Partial Support of the aquatic life use is based on Rapid Bioassessment Protocol II surveys (RBP II) at 4AMEE002.38 in 1996 and 4AMEE000.70 (Below Rt. 122 Bridge) in 1999 and 2000. Each survey found moderate impacts to the benthic community largely due to sedimentation. The aquatic life use impairment is a 2002 addition that spans 7.38 miles from the Piedmont Mill dam downstream to Maggodee Creek confluence with the Blackwater River in Franklin County. The Maggodee Creek TMDL study did not address the General Standard (Benthic) impairment.

Excursions of the 0.20 mg/l total phosphorus threshold cause 14.82 miles of Maggodee Creek to be fully supporting, but threatened for the aquatic life use. Exceedances are found in three stations along Maggodee Creek. Stations include: 4AMEE04.90 (Rt. 697 Bridge), 4AMEE007.85 (Rt. 687 Bridge) and 4AMEE009.86 (Rt. 635 Bridge) all in Franklin County. 4AMEE004.90 has three of 15 samples and 4AMEE007.85 two of 13 samples exceeding the threshold. The maximum values are 0.37, 0.60 and 4.57mg/l at 4AAMEE004.90 and 0.24 and 0.83 mg/l at 4AMEE007.85. Two of 14 samples exceed at 4AMEE009.86. Maxima at 4AMEE009.86 are 0.22 and 0.63 mg/l. The total phosphorus 'Threatened' status extends from the Boones Mill STP downstream to Maggodee's mouth on the Blackwater River. A separate Part 3 fact sheet describes the fully supporting, but threatened segment for the aquatic life use.

IMPAIRMENT SOURCE NPS - Agriculture/Urban, NPS - Agriculture

Swimming Use
Bacteria source tracking utilized in the TMDL study show agriculture and wildlife as the major contributors of fecal coliform bacteria in the Maggodee Creek drainage.

Aquatic Life Use
The source of the General Standard (Benthic) impairment is believed to be mainly from agricultural nonpoint source pollution. Total phosphorus contributions are believed to be the result of nonpoint source agricultural and possible urban runoff in the upper portions of the 'Threatened' segment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Franklin

STREAM NAME: Gills Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L11R_GIL03A00

SEGMENT SIZE: 22.25 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2000 - 2002

UPSTREAM LIMIT:

DESCRIPTION: Headwaters west of Rt. 684 Bridge.

RIVER MILE: 28.62

LATITUDE: 37.15528 **LONGTITUDE:** -79.92226

DOWNSTREAM LIMIT:

DESCRIPTION: Gills Cr. backwaters of Smith Mtn. Lake

RIVER MILE: 6.37

LATITUDE: 37.08500 **LONGTITUDE:** -79.71131

The segment upper limit is west of the Rt. 684 Bridge in Franklin County (Garden City Quad). The downstream limit is in the Gills Creek backwaters of Smith Mountain Lake. (Moneta S.W. Quad).

Note: Segment mileages have changed due to the use of the National Hydrography Dataset (NHD). Lower portions of the 1998 listed segment are incorporated in watershed L12L listings.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Swimming Use
The Gills Creek fecal coliform bacteria Total Maximum Daily Load (TMDL) Study and allocation scenario development are underway. The anticipated completion date is 05/01/2002. The segment, originally 303(d) Listed in 1996, is based on a 319 funded special study (SS 925102) and ambient sample collections. Abundant fecal coliform bacteria counts failed to support the swimming use by exceedances of both the geometric mean (200 n/100 ml) and instantaneous criterion (1000 n/100 ml).

The stream continues to fail to meet the swimming use due to exceedances of the instantaneous 1000 n/100 ml criterion. Six of 22 samples exceed at station 4AGIL023.22 (Rt. 657 Bridge). Station 4AGIL008.30 (Rt. 834 Bridge near Booker T. Washington National Park) records four of 13 excursions of the criterion. The swimming use remains impaired.

Aquatic Life Use
The lower portion of Gills Creek is fully supporting, but threatened for the aquatic life use due to exceedances of the total phosphorus 0.20 mg/l threshold. Station 4AGIL008.30 reports two of 13 total phosphorus observations in excess of the threshold. Maxima are 0.59 (April 2000) and 1.43 mg/l (June 2000). The 'Threatened' segment extends from upstream of the Rt. 122 Bridge near the Booker T. Washington National Monument downstream to the Gills Creek backwaters of Smith Mountain Lake.

IMPAIRMENT SOURCE NPS - Agriculture/Urban, NPS - Agriculture

Swimming Use
The stream is believed to be predominately impacted by agricultural activity with some urbanizing areas contributing to nonpoint source runoff. Based on TMDL studies conducted in adjacent Blackwater River watersheds wildlife could be a primary contributor of fecal coliform bacteria contamination.

Aquatic Life Use
The source of the total phosphorus is believed to be primarily from agricultural nonpoint source runoff.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Bedford, Franklin

STREAM NAME: Smith Mountain Lake - Roanoke River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L12L_ROA04A02

SEGMENT SIZE: 378 - Acres

INITIAL LISTING: 2002 **TMDL Schedule** 2004 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Back Creek mouth on Roanoke River (795 ft. pool elevation)

RIVER MILE: 195.00

LATITUDE: 37.22528 **LONGTITUDE:** -79.84752

DOWNSTREAM LIMIT:

DESCRIPTION: Falling Cr. mouth on Roanoke R. SML

RIVER MILE: 188.91

LATITUDE: 37.23250 **LONGTITUDE:** -79.78214

The segment begins at the mouth of Back Creek on the Roanoke River at the dead end of Rt. 618 and extends downstream to the mouth of Falling Creek on the Roanoke River, 6.09 miles in length. The entire segment is on the Hardy Quad.

Note: 1998 listed segment VAW-L07R is now incorporated in this segment. The backwaters of Smith Mountain Lake extend to the mouth of Back Creek. Segment mileage is 2002 reported as acres. Slight changes are due to the use of the National Hydrography Dataset (NHD).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting, Fish Consumption Use - Partially Supporting, Aquatic Life Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform, Fish Tissue - PCBs, Dissolved oxygen (bottom)

The segment brackets lake stations 4AROA196.05 McVeigh Ford, 4AROA192.94 just upstream of the Rt. 634 (Hardy Road) Bridge and 4AROA192.55 at the Rt. 634 (Hardy Road) Bridge (surface sample collections from Bridge). Six citizen monitored stations are within the segment. No citizen collections were made at depth.

Swimming Use
Top layer: Fecal coliform bacteria continue to cause the segment to only partially support the CWA swimming use. Station 4AROA196.05-TL records five of 23 samples in excess of the 1000 n/100 ml criterion. Stations 4AROA192.94-TL finds three of 23 samples and 4AROA192.55-TL records 11 out of 56 samples exceeding the instantaneous criterion. Two citizen stations report no exceedances in excess of the instantaneous criterion from sample sizes of nine. The segment remains 303(d) Listed.

Fish Consumption Use
1999 fish collections at 4AROA196.05-TL reveal polychlorinated biphenyls (PCBs) in excess of the human health-risk carcinogenic screening value (SV) of 54 parts per billion (ppb) in tissue from four species:

Largemouth Bass - 73.7, Carp - 124, Gizzard Shad- 386, and Redhorse Sucker - 89.9 ppb. These waters only partially support the fish consumption use. There is no Virginia Department of Health (VDH) Advisory as tissue concentrations are below the VDH action level of 600 ppb. Information on the fish tissue sampling program can be viewed at http://www.deq.state.va.us/water/

Aquatic Life Use
Top layer: Total phosphorus exceedances of the 0.05 mg/l threshold for reservoirs are found at 4AROA196.05-TL, 4AROA192.94-TL and 4AROA192.55-TL causing the waters to be fully supporting, but threatened. Ten of 23 total phosphorus samples exceed the threshold at 4AROA196.05-TL and 11 of 23 at 4AROA192.94-TL. Station 4AROA192.55 records 31 of 60 samples exceeding the threshold.

Station 4AROA196.05-TL exceeding values range from 0.06 to 0.22 mg/l. 4AROA192.94-TL maxima range from 0.06 to 0.11 mg/l. Exceedances range from 0.06 to 0.20 mg/l at 4AROA192.55-TL. Citizen data from four stations report exceedances in excess of the threshold as well in sample sizes ranging from five to 12.

Bottom layer: Dissolved oxygen in the bottom layer of the reservoir exceeds the 4.0 mg/l minimum criterion for Class IV waters. Exceedances occur in the late spring, summer and early fall. Dissolved oxygen depletion below the thermocline is a natural occurrence in reservoirs. Water Quality Standards do not specifically address the maintenance of dissolved oxygen levels (stratification) in a reservoir bottom layer. The minimum criterion, based on Class of water, applies to all waters in the Commonwealth. Depth profiles at the existing stations were not conducted. However exceedances of the minimum criterion are believed to occur and are therefore listed as a natural impairment (see Part 1C). The waters do not support the aquatic life use based on the existing Class IV dissolved oxygen minimum criterion and the natural depletion of oxygen at depth in reservoirs. The 2002 dissolved oxygen 303(d) Listing is new to this segment.

The waters are fully supporting, but threatened based on the exceedance of the 1995 NOAA sediment effect-range median (ER-M) screening values (SV) for chlorodane. Station 4AROA196.05-BL records a 1999 sediment chlorodane value of 8.86 parts per billion (ppb) from four sediment collections. The NOAA 1995 ER-M SV for chlordane is 6 ppb.

A separate Part 1C describes an aquatic life use impairment and a Part 3 fact sheet describes the aquatic life use "Threatened' status for total phosphorus and sediment organics.

IMPAIRMENT SOURCE NPS - Urban, Unknown, Natural/Stratification

Swimming Use
The source is believed to be primarily from upstream urban nonpoint source contributions (VAW-L04R) and marginal agricultural activity in proximity of the upper reaches of Smith Mountain Lake.

Fish Consumption Use
The exact source(s) of the PCB contamination is unknown.

The Virginia Department of Health (VDH) PCB action level is 600 ppb in fish tissue. PCBs are a group of man-made industrial chemicals that exist as a mixture and may contain up to 209 individual compounds. Since 1977, PCBs have not been produced in the U.S., but are still found in the environment. PCBs were once widely used as coolants and lubricants in transformers, capacitors and other electrical equipment. Other information on VDH fish consumption advisories, prohibitions or bans can be viewed at http://www.vdh.state.va.us

Aquatic Life Use
The total phosphorus source is believed to be primarily from upstream urban nonpoint source contributions (VAW-L04R) and marginal agricultural activity in proximity of the upper reaches of Smith Mountain Lake. Smith Mountain Lake is designated by Virginia's Water Quality Standards as a Nutrient Enriched Water (9 VAC 25-260-350 A.1.). The Upper Roanoke River Subarea Water Quality Management Plan (WQMP) also lists Smith Mountain Lake as water quality limited for phosphorus (9 VAC 25-440-80 Segment classification; standards and 9-VAC 25-440-130 4. Nutrient Policy.).

Bottom dissolved oxygen depletion occurs naturally in reservoirs due to stratification.

The source of the sediment chlorodane contamination is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Bedford, Franklin

STREAM NAME: Smith Mountain Lake - Roanoke River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L12L_ROA03A02

SEGMENT SIZE: 2871 - Acres

INITIAL LISTING: 2002 **TMDL Schedule** 2004 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Falling Cr. mouth on the Roanoke R.

RIVER MILE: 188.91

LATITUDE: 37.23250 **LONGTITUDE:** -79.84752

DOWNSTREAM LIMIT:

DESCRIPTION: Upstream of Beckys Cr. mouth on Roanoke R.

RIVER MILE: 173.34

LATITUDE: 37.13000 **LONGTITUDE:** -79.65476

The segment begins at the Falling Creek mouth and extends downstream 15.57 miles to upstream of the Beckys Creek confluence on the Roanoke River. The segment spans the Hardy and Goodview Quads.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Fish Tissue - PCBs

The segment brackets mainstem lake stations 4AROA183.64 at the mouth of Beaverdam Creek, 4AROA180.21 at the confluence with Indian Creek and 4AROA175.63 at Hales Ford Bridge. There are a total of 11 citizen sites monitored for total phosphorus and chlorophyll a. Four citizen sites were monitored for fecal coliform bacteria. No citizen collections were made at depth.

Fish Consumption Use
1998 fish collections at 4AROA175.63-TL find polychlorinated biphenyls (PCBs) in excess of the human health-risk carcinogenic screening value (SV) of 54 parts per billion (ppb) in tissue from four Striped Bass. Fish tissue results are 58.0, 84.7, 107.0 and 198.0 ppb. These waters only partially support the fish consumption use. There is no Virginia Department of Health (VDH) Advisory as tissue concentrations are below the VDH action level of 600 ppb. Information on the fish tissue sampling program can be viewed at http://www.deq.state.va.us/water/

Aquatic Life Use
Top layer: Three stations report exceedances of the pH range criterion 6.0-9.0 Standard Units (SU) in the surface waters of Smith Mountain Lake resulting in the impairment of the aquatic life use. All exceedances were above the 9.0 SU alkaline range. Exceedances of the criterion occur at 4AROA183.64-TL, 4AROA180.21-TL and 4AROA175.63-TL. Six of 23 pH measurements exceed the criterion at 4AROA183.64-TL and seven of 23 at 4AROA180.21-TL. Station 4AROA175.63-TL records six of 23 measurements exceeding the criterion.

Station 4AROA183.64.05-TL exceeding values range from 9.10 to 9.20 SU. 4AROA180.21-TL maxima range from 9.07 to 9.80 SU. Exceedances range from 9.03 to 9.40 SU at 4AROA192.55-TL. There are no pH citizen data.

The aquatic life use is fully supporting but, threatened for total phosphorus due to excursions of the 0.05 mg/l threshold from top and bottom (see below) layer samples. Five Roanoke River mainstem citizen sites record excursions of the threshold. 4AROA-R19-FC records the most occurrences in 15 of 21 samples. Values range from a low of 0.04 to a maximum of 0.15 mg/l. The mean concentration is 0.06 mg/l. The exceedance rate at each of the remaining stations is greater than 10 percent. Overall from a total of 245 total phosphorus samples 80 exceed the threshold.

Chlorophyll a results show full support of the aquatic life use. Only two of 11 citizen chlorophyll a stations produce exceedance rates greater than 10 percent (lake threshold = 0.05 mg/l). Station 4AROA-R23-FC reports 3 of 23 excursions and 3 of 23 at 4AROA-CR22-FC. Both sites are off the main body. Only eight observations exceed the chlorophyll a threshold from a total of 252 samples. Citizen sites are on and off the main body of the lake.

Bottom layer: Dissolved oxygen in the bottom layer of the reservoir exceeds the 4.0 mg/l minimum criterion for Class IV waters. Exceedances occur in the late spring, summer and early fall. Dissolved oxygen depletion below the thermocline is a natural occurrence in reservoirs. Water Quality Standards do not specifically address the maintenance of dissolved oxygen levels (stratification) in a reservoir bottom layer. The minimum criterion, based on Class of water, applies to all waters in the Commonwealth. 4AROA183.64-BL reports 25 excursions from 44 measurements, 4AROA180.21 27 of 43 and 4AROA175.63 exceeds the minimum in 24 of 45. The waters do not support the aquatic life use based on the existing Class IV dissolved oxygen minimum criterion and the natural depletion of oxygen at depth in reservoirs.

Total phosphorus exceedances of the 0.05 mg/l lake threshold are found at 4AROA183.64-BL and 4AROA180.21-BL causing the waters to be fully supporting, but threatened for the aquatic life use. Nine of 45 samples exceed the threshold at 4AROA183.64-BL and six of 43 at 4AROA180.21-BL. Station 4AROA183.64.05-BL exceeding values range from 0.06 to 0.14 mg/l. 4AROA180.21-BL maxima range from 0.06 to 0.16 mg/l.

Sediment metals are found at 4AROA183.64-BL from one of four samples. The 1995 NOAA effect-range median (ER-M) screening values (SV) in parts per million (ppm) exceed for silver (Ag, SV=3.7, 1 of 4 samples 22.3), beryllium (Be, SV=5, 1 of 4 samples 16.2), nickel (Ni, SV=51.6, 1 of 4 samples 183.21) and lead (Pb, SV=218, 1 of 4 samples 466).

A separate Part 1C fact sheet describes the natural pH and dissolved oxygen impairments. And a Part 3 fact sheet describes the aquatic life use 'Threatened' status of the waters.

IMPAIRMENT SOURCE Unknown

Fish Consumption Use
The exact source(s) of the PCB contamination is unknown.

The Virginia Department of Health (VDH) PCB action level is 600 ppb in fish tissue. PCBs are a group of man-made industrial chemicals that exist as a mixture and may contain up to 209 individual compounds. Since 1977, PCBs have not been produced in the U.S., but are still found in the environment. PCBs were once widely used as coolants and lubricants in transformers, capacitors and other electrical equipment. Other information on VDH fish consumption advisories, prohibitions or bans can be viewed at http://www.vdh.state.va.us

Aquatic Life Use
The source of the pH alkaline exceedances is due to natural conditions created in reservoirs.

Bottom dissolved oxygen depletion occurs naturally in reservoirs due to stratification.

Total phosphorus sources are believed to be a mix of nonpoint source contributions from upstream urban (VAW-L04R) and marginal agricultural activity in the immediate drainage (VAW-L07R) to Smith Mountain Lake. Smith Mountain Lake is designated by Virginia's Water Quality Standards as a Nutrient Enriched Water (9 VAC 25-260-350 A.1.). The Upper Roanoke River Subarea Water Quality Management Plan (WQMP) also

lists Smith Mountain Lake as water quality limited for phosphorus (9 VAC 25-440-80 Segment classification; standards and 9-VAC 25-440-130 4. Nutrient Policy.).

The exact source of the sediment metals contamination is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Franklin

STREAM NAME: Smith Mountain Lake - Blackwater River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L12L_BWR01A02

SEGMENT SIZE: 4659 - Acres

INITIAL LISTING: 2002 **TMDL Schedule** 2004 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Backwaters of Blackwater R. in SML (795 ft. pool elevation)

RIVER MILE: 18.22

LATITUDE: 37.06250 **LONGTITUDE:** -79.76989

DOWNSTREAM LIMIT:

DESCRIPTION: Blackwater R. confluence on Roanoke R.

RIVER MILE: 0.00

LATITUDE: 37.04417 **LONGTITUDE:** -79.66262

The segment begins at the Smith Mountain Lake backwaters of the Blackwater River and extend downstream 18.22 miles to the Blackwater mouth on the Roanoke River. The segment spans the Redwood, Moneta SW and Smith Mountain Dam Quads.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting, Fish Consumption Use - Partially Supporting, Aquatic Life Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform - 349 acres, Fish Tissue - PCBs - 1755 acres, pH - 349 acres / Dissolved oxygen (bottom) - 4659 acres

Monitoring stations discussed below are all in Franklin County. They are 4ABWR019.75 (Rt. 834 - Brooks Mill Bridge), 4ABWR017.42 (Buoy 50), 4ABWR010.92 (Buoy No. 11B - Old Buoy No.), 4ABWR010.55 (Buoy No. 23), 4ABWR002.50 (Near mouth of Blackwater River) and citizen stations 4ABWR-B18-FC (On a line perpendicular to Rt. 669), 4ABWR-T3-FC (Rt. 834 - Brooks Mill Bridge), 4ABWR-B20-FC (~0.5 miles downstream of Poplar Camp mouth) and 4ABWR-B22-FC (Across from end of Rt. 958)

Swimming Use
The free flowing Lower Blackwater River fecal coliform bacteria Total Maximum Daily Load (TMDL) Study and allocation scenario is complete. The segment is therefore delisted for fecal coliform with the US Environmental Protection Agency (EPA) approval of the study on 04/27/2001. The entirety of the approved study and allocations can be viewed at http://www.deq.state.va.us. Phase I Implementation Plan development is the next step. Once implementation is complete on the Lower, Middle and Upper Blackwater as well as Maggodee Creek improved conditions are anticipated in the Smith Mountain Lake segment.

The original segment extending from the Blackwater River headwaters into Smith Mountain Lake became listed based on a 319 funded special study (SS 925102) and ambient sample collections. Abundant fecal coliform bacteria counts failed to support the swimming use by exceedances of both the geometric mean (200

n/100 ml) and instantaneous criterion (1000 n/100 ml).

Top layer: Fecal coliform bacteria cause 4.37 miles or 349 acres of the upper Blackwater River arm to only partially support the swimming use. Monitoring continues at station 4ABWR019.75. Ambient data show eight of 58 samples exceed the instantaneous criterion. Downstream two of 19 samples also exceed at 4ABWR017.42-TL. The waters from the backwaters of the Blackwater River downstream to near the 4-H Camp (37°03'03.16" / 079°43'48.35") remain impaired for the swimming use.

Fish Consumption Use
Fish tissue collections from 1998 and 1999 produce results that require further collections to substantiate the degree of use support in this 8.81 mile or 1755 acre portion of the overall segment. The fish consumption portion of the overall segment extends from the near the 4-H Camp downstream to the mouth of Gills Creek (37°02'49.06" / 079°39'56.69").

1998 fish collections at 4ABWR010.92 find polychlorinated biphenyls (PCBs) in excess of the human health-risk carcinogenic screening value (SV) of 54 parts per billion (ppb) in tissue from three Stripped Bass. PCB values are 70.5, 70.2 and 99.0 ppb. 1999 collections at 4ABWR010.92 report no exceedances from Carp, Redhorse Sucker, Gizzard Shad, Bluegill or Largemouth Bass. The highest 1999 PCB concentration occurs in Carp tissue at 7.36 ppb. No Stripped Bass were captured during this sampling event. Based on these results the waters partially support the fish consumption use. Additional fish tissue sampling would aid in determining the spatial extent of the impairment. There is no Virginia Department of Health (VDH) Advisory as tissue concentrations are below the VDH action level of 600 ppb. Information on the fish tissue sampling program can be viewed at http://www.deq.state.va.us/water/

Aquatic Life Use
Top layer: The waters exceed the pH criterion of 6.0 - 9.0 Standard Units (SU) from the backwaters of the Blackwater River downstream to near the 4-H Camp. Station 4ABWR017.42-TL records two of 19 pH measurements exceeding the alkaline criterion. Each exceeding value is 9.1 SU. One occurs in June 1996 and the second in July 1999. The aquatic life use is only partially supported for 4.37 miles or 349 acres of the upper Blackwater River arm in Smith Mountain Lake as a result. A separate Part 1C fact sheet supplies information on this pH segment.

Excursions of the total phosphorus 0.05 mg/l threshold for lakes cause 13.18 miles or 2104 acres of the lake to be 'Threatened' for the aquatic life use. The total phosphorus portion of the overall segment extends from the Blackwater River backwaters downstream to the mouth of Gills Creek. Stations recording exceedances with maximums in "(mg/l)" in downstream order are 4ABWR-T3-FC (0.14), 4ABWR017.42-TL (0.20), 4ABWR-B22-FC (0.11), 4ABWR-B20-FC (0.10) and 4ABWR-B18-FC (0.17). Nine citizen stations record 55 excursions of the criterion from a total of 216 samples. Eight citizen chlorophyll a stations record no exceedances of the 0.05 mg/l threshold from 173 observations. A separate Part 3 fact sheet provides information on the segment.

Bottom layer: Dissolved oxygen in the bottom layer of the reservoir exceeds the 4.0 mg/l minimum criterion for Class IV waters. Exceedances occur in the late spring, summer and early fall. Dissolved oxygen depletion below the thermocline is a natural occurrence in reservoirs. Water Quality Standards do not specifically address the maintenance of dissolved oxygen levels (stratification) in a reservoir bottom layer. The minimum criterion, based on Class of water, applies to all waters in the Commonwealth. Station 4ABWR010.55-BL records 14 of 36 measurements below the minimum criterion and 4ABWR002.50-BL records 16 of 37. The waters do not support the aquatic life use based on the existing Class IV dissolved oxygen minimum criterion and the natural depletion of oxygen at depth in reservoirs. The 2002 dissolved oxygen 303(d) Listing is new to this segment.

The aquatic life use is also fully supporting, but threatened on the Blackwater mainstem due to an exceedance of the 1995 NOAA effect-range median (ER-M) screening values (SV) in parts per million (ppm) for nickel. Station 4ABWR002.50 records a 1998 maximum value of 54.64 ppm (Ni, SV=51.6, 1 of 3 samples). The 5.04 mile or 2555 acre segment extends from the mouth of Gills Creek downstream to the Blackwater River confluence with the Roanoke River.

IMPAIRMENT SOURCE NPS - Agriculture/Urban/Wildlife, Unknown, Natural/Stratification

Swimming Use
The source of the impairment is a combination of agricultural, residential and wildlife contributions from upstream watersheds VAW-L08R, VAW-L09R and VAW-L10R.

Fish Consumption Use
The exact source(s) of the PCB contamination is unknown.

The Virginia Department of Health (VDH) PCB action level is 600 ppb in fish tissue. PCBs are a group of man-made industrial chemicals that exist as a mixture and may contain up to 209 individual compounds. Since 1977, PCBs have not been produced in the U.S., but are still found in the environment. PCBs were once widely used as coolants and lubricants in transformers, capacitors and other electrical equipment. Other information on VDH fish consumption advisories, prohibitions or bans can be viewed at http://www.vdh.state.va.us

Aquatic Life Use
The source of the pH alkaline exceedance is due to natural conditions created in reservoirs.

Bottom dissolved oxygen depletion occurs naturally in reservoirs due to stratification.

Total phosphorus sources are believed to be a mix of nonpoint source contributions from upstream watersheds VAW-L08R, VAW-L09R and VAW-L10R primarily from agricultural activity. Smith Mountain Lake is designated by Virginia's Water Quality Standards as a Nutrient Enriched Water (9 VAC 25-260-350 A.1.). The Upper Roanoke River Subarea Water Quality Management Plan (WQMP) also lists Smith Mountain Lake as water quality limited for phosphorus (9 VAC 25-440-80 Segment classification; standards and 9-VAC 25-440-130 4. Nutrient Policy.).

The exact source of the sediment nickel contamination is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Franklin

STREAM NAME: Smith Mountain Lake - Gills Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L12L_GIL01A02

SEGMENT SIZE: 733 - Acres

INITIAL LISTING: 2002 **TMDL Schedule** 2004 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Backwaters of Gills Cr.

RIVER MILE: 6.37

LATITUDE: 37.08222 **LONGTITUDE:** -79.70693

DOWNSTREAM LIMIT:

DESCRIPTION: Confluence of Gills Cr. with Blackwater R.

RIVER MILE: 0.00

LATITUDE: 37.04694 **LONGTITUDE:** -79.66575

The segment begins at the Gills Creek backwaters and extends downstream 5.21 miles to the Gills Creek mouth on the Blackwater River in Smith Mountain Lake.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform - 180 acres

Stream station 4AGIL008.34 (Rt. 834 Bridge near Booker T. Washington National Park) and downstream lake stations 4AGIL002.39 (Below Strippers Landing) and citizen stations 4AGIL-13A-FC (Foxport Marina), 4AGIL-13B-FC (near Foxport Marina) and 4AGIL-G12-FC (mouth of Gills Creek) provide data utilized in this segment.

Swimming Use
The free flowing Gills Creek fecal coliform bacteria Total Maximum Daily Load (TMDL) Study and allocation scenario development are underway. The anticipated completion date is 05/01/2002. The fecal coliform segment will be de-listed once the study and allocation scenario is complete with final approval obtained from the US Environmental Protection Agency (EPA). The entirety of the approved study and allocations will be available for viewing at http://www.deq.state.va.us. Phase I Implementation Plan development is the next step. Once implementation is complete improved conditions are anticipated in the Gills Creek - Smith Mountain Lake segment.

The swimming use segment, originally 303(d) Listed in 1996, is based on a 319 funded special study (SS 925102) and ambient sample collections. Abundant fecal coliform bacteria counts failed to support the swimming use by exceedances of both the geometric mean (200 n/100 ml) and instantaneous criterion (1000 n/100 ml).

Top layer: Based on fecal coliform bacteria samples collected upstream at 4AGIL008.34 the upper reaches of Gills Creek in Smith Mountain Lake continue to fail to meet the swimming use due to exceedances of the instantaneous 1000 n/100 ml criterion. Four of 13 samples exceed the criterion at station 4AGIL008.30. The

swimming use remains impaired but the segment length is modified.

The 2002 fecal coliform bacteria segment is shortened from the 1998 303(d) Listing in Smith Mountain Lake. The segment now extends from the Gills Creek backwaters downstream 2.41 miles, approximately 2.0 miles downstream of the Rt. 668 crossing or 180 acres in Smith Mountain Lake (37°04'03.78" / 079°40'40.12"). Station 4AGIL002.39-TL reports no excursions of the instantaneous criterion from 20 samples. Citizen stations 4AGIL-13A-FC and 4AGIL-13B-FC also found no exceedances from nine fecal coliform bacteria samples.

Aquatic Life Use
Top layer: The Smith Mountain Lake portion of Gills Creek is fully supporting, but threatened for the aquatic life use due to exceedances of the total phosphorus 0.05 mg/l threshold. The 'Threatened' status extends from Gills Creek backwaters downstream to its mouth on the Blackwater River based on top and bottom layer (see below) exceedances. Top layer exceedances occur at citizen station 4AGIL-G12-FC in Three of 24 samples. The exceeding values range from 0.051 to 0.065 mg/l. The remaining four citizen stations record excursions (five) of the threshold but none greater than 10 percent from 83 samples. The aquatic life use segment is composed of a total of 733 acres or 5.21 miles.

Citizen chlorophyll a collections at five stations record only two exceedances of the 0.05 mg/l threshold from a total of 84 samples. Station 4AGIL002.39 found only one exceedance from 11 samples.

Bottom layer: The Smith Mountain Lake portion of Gills Creek is fully supporting, but threatened for the aquatic life use due to exceedances of the total phosphorus 0.05 mg/l threshold. Station 4AGIL002.39-BL located below Strippers Landing reports two of 12 samples exceeding the threshold. Maxima values range from 0.08 to 0.09 mg/l at 4AGIL002.39.

Dissolved oxygen in the bottom layer of the reservoir exceeds the 4.0 mg/l minimum criterion for Class IV waters. Exceedances occur in the late spring, summer and early fall. Dissolved oxygen depletion below the thermocline is a natural occurrence in reservoirs. Water Quality Standards do not specifically address the maintenance of dissolved oxygen levels (stratification) in a reservoir bottom layer. Depth profiles in this upper segment of Gills Creek were not conducted. However downstream station 4AGIL002.39 does record eight of 12 dissolved oxygen measurements exceeding the minimum criterion. The segment is therefore listed as a natural impairment (see Part 1C). The minimum criterion, based on Class of water, applies to all waters in the Commonwealth. The waters do not support the aquatic life use based on the existing Class IV dissolved oxygen minimum criterion and the natural depletion of oxygen at depth in reservoirs. The 2002 dissolved oxygen 303(d) Listing is new to this segment.

A separate Part 1C fact sheet describes the dissolved oxygen aquatic life use impairment. A Part 3 fact sheet describes the aquatic life use 'Threatened' total phosphorus segment.

IMPAIRMENT SOURCE NPS - Agriculture/Wildlife

Swimming Use
The source of the fecal coliform bacteria is believed primarily due to agricultural nonpoint source runoff. A wildlife component is believed to contribute to the impairment as well.

Aquatic Life Use
Total phosphorus excursions are believed due to agricultural nonpoint source runoff.

Bottom dissolved oxygen depletion occurs naturally in reservoirs due to stratification. Smith Mountain Lake is designated by Virginia's Water Quality Standards as a Nutrient Enriched Water (9 VAC 25-260-350 A.1.). The Upper Roanoke River Subarea Water Quality Management Plan (WQMP) also lists Smith Mountain Lake as water quality limited for phosphorus (9 VAC 25-440-80 Segment classification; standards and 9-VAC 25-440-130 4. Nutrient Policy.).

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Pittsylvania

STREAM NAME: Leesville Lake - Pigg River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L13L_PGG01A02

SEGMENT SIZE: 154 - Acres

INITIAL LISTING: 1998 **TMDL Schedule** 2000 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Backwaters of Leesville Lake on the Pigg R.

RIVER MILE: 3.06

LATITUDE: 36.98861 **LONGTITUDE:** -79.51589

DOWNSTREAM LIMIT:

DESCRIPTION: Confluence of Pigg and Roanoke R.

RIVER MILE: 0.00

LATITUDE: 37.00528 **LONGTITUDE:** -79.48122

The segment extends from the backwaters of Leesville Lake on the Pigg River downstream to the Pigg River confluence with the Roanoke River. The segment spans the Sandy Level, Pittsville and Leesville Lake Quads.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Swimming Use
Fecal coliform bacteria cause the segment to not support the swimming use. The segment incorporates station 4APGG003.29 (Rt. 605 Bridge). Six of 23 samples exceed the 1000 n/100 ml instantaneous criterion.

Fish Consumption Use
A Tier 2 fish tissue study (1993 Roanoke River Basin Study DEQ, Water Research & Standards, Richmond, Virginia) found polychlorinated biphenyls (PCBs) in one of five species at 4APGG003.29 in excess of the EPA human health-risk carcinogenic screening value (SV) of 54 parts per billion (ppb); Walleye (65.6 max.), a total of 50 fish were collected. The waters are fully supporting, but threatened for the fish consumption use based the exceedance of the SV for PCBs.

1999 fish tissue collections found no exceedances from a total of 22 fish. Species include Largemouth Bass, Carp, Yellow Perch and Redhorse Sucker. No Walleye were collected.

IMPAIRMENT SOURCE NPS - Agriculture

Swimming Use
The believed source of fecal coliform bacteria is primarily agricultural nonpoint source runoff. Wildlife contributions are possible in the mostly rural watershed.

Fish Consumption Use
The exact sources of the PCB contamination are unknown.

The Virginia Department of Health (VDH) action level for PCBs is 600 ppb in fish tissue. The Virginia Department of Health (VDH) review of the 1993 study by the Toxic Substances Program reports ". . . that none of the contaminants, at reported concentrations, poses an imminent threat to human health from consuming fish." (January 17, 1997, letter from Khizar Wasti, Director, Division of Health Hazards Control, VDH to Alan Anthony, Director, Water Research & Standards, DEQ).

PCBs are a group of man-made industrial chemicals that exist as a mixture and may contain up to 209 individual compounds. Since 1977, PCBs have not been produced in the U.S., but are still found in the environment. PCBs were once widely used as coolants and lubricants in transformers, capacitors and other electrical equipment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Pittsylvania

STREAM NAME: Old Womans Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L13R_OWC01A00

SEGMENT SIZE: 4.86 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2004 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Headwaters-end of perennial section

RIVER MILE: 8.43

LATITUDE: 36.97417 **LONGTITUDE:** -79.39528

DOWNSTREAM LIMIT:

DESCRIPTION: Old Womans Cr. mouth on Roanoke R.

RIVER MILE: 3.57

LATITUDE: 37.06194 **LONGTITUDE:** -79.40472

The upstream limit of this segment is the creek's headwaters. The downstream limit is at the inundation of Old Woman's Creek at Leesville Lake.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

These waters are listed for fecal coliform bacteria in the 1998 Plaintiffs Attachment B list for consideration in development of the 2002 303(d) Listing. Exceedances of the 1000 n/100 ml instantaneous fecal coliform bacteria criterion are found at station 4AOWC005.36. Three of 22 samples exceed the criterion. The segment only partially supports the swimming use.

IMPAIRMENT SOURCE NPS - Agriculture/Wildlife

The source of fecal coliform bacteria is believed to be a possible mix of agricultural and wildlife nonpoint source runoff.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Franklin

STREAM NAME: Pigg River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L14R_PGG04A00

SEGMENT SIZE: 21.68 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2004 - 2006

UPSTREAM LIMIT:

DESCRIPTION: Storey Cr. mouth on the Pigg River

RIVER MILE: 64.57

LATITUDE: 36.96361 **LONGTITUDE:** -79.90908

DOWNSTREAM LIMIT:

DESCRIPTION: ~ Ten miles downstream of Rocky Mt. STP.

RIVER MILE: 42.89

LATITUDE: 36.98250 **LONGTITUDE:** -79.78292

The segment begins at the mouth of Storey Creek on the Pigg River and extends downstream of the Rocky Mount STP to an unnamed tributary to the Pigg River upstream of the community of Gladehill. The segment spans the Rocky Mount and Gladehill Quads.

Note: The 1998 listed segment is extended upstream to the mouth of Storey Creek. Other changes in mileage are due to the use of the National Hydrography Dataset (NHD).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

The segment brackets station 4APGG052.73 (Rt. 713 Bridge above Rocky Mt. STP) where the swimming use is only partially supporting. Eleven of 59 samples exceed the 1000 n/100 ml fecal coliform bacteria instantaneous criterion.

IMPAIRMENT SOURCE NPS - Agriculture/Urban

The believed source is largely agricultural nonpoint pollution, although an urban nonpoint source influence probably occurs in the Rocky Mount area.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Franklin

STREAM NAME: Storey Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L14R_SDA02A00

SEGMENT SIZE: 11.6 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Intersection of Rt. 40 & Rt. 748

RIVER MILE: 11.60

LATITUDE: 36.93000 **LONGTITUDE:** -80.03851

DOWNSTREAM LIMIT:

DESCRIPTION: Storey Cr. mouth on the Pigg River

RIVER MILE: 0.00

LATITUDE: 36.96361 **LONGTITUDE:** -79.90908

The upper limit is west of Ferrum near the intersection of Rt. 40 and Rt. 748, perennial headwaters (Ferrum Quad). The downstream limit is the mouth of Storey Creek on the Pigg River (Rocky Mount Quad).

Note: Slight changes in segment mileage are due to the use of the National Hydrography Dataset (NHD).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Swimming Use
The segment does not support the swimming use. Nonsupport is due to fecal coliform bacteria exceedances of the 1000 n/100 ml criterion at two stations 4ASDA009.79 (Rt. 623 above Ferrum STP) and 4ASDA009.77 (off Rt. 864 below Ferrum STP). 4ASDA009.79 finds six exceedances from 23 samples and 4ASDA000.977 records 16 out of 56.

Aquatic Life Use
Station 4ASDA009.77 records 22 exceedances of the 0.20 mg/l total phosphorus threshold from 57 samples. Maxima range in values from 0.30 to 4.30 mg/l (November 1998). 4ASDA009.77 is located downstream of the Ferrum Water & Sewerage Authority's outfall on Storey Cr. Upstream station 4ASDA009.79 found no exceedances from 17 samples. The aquatic life use 9.61 mile "Threatened' segment extends from the Ferrum Water & Sewerage Authority outfall (36°55'36.24 / 080°00'35.56) downstream to the Storey Creek mouth on the Pigg River.

IMPAIRMENT SOURCE NPS - Agriculture/Urban

Swimming Use

The source is believed to be a mix of agricultural and urban nonpoint source runoff around the Ferrum area. Infiltration/Inflow problems have been noted in the Ferrum area. A Consent Order requires the Ferrum Water & Sewerage Authority to correct these problems.

Aquatic Life Use
The source of the total phosphorus is believed from the Ferrum Water & Sewerage Authority's STP on Storey Creek.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Franklin

STREAM NAME: Pigg River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L16R_PGG02A00

SEGMENT SIZE: 15.54 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2004 - 2006

UPSTREAM LIMIT:

DESCRIPTION: Big Chestnut Cr. mouth on the Pigg R.

RIVER MILE: 32.99

LATITUDE: 36.93083 **LONGTITUDE:** -79.73730

DOWNSTREAM LIMIT:

DESCRIPTION: Snow Cr. mouth on the Pigg R.

RIVER MILE: 17.45

LATITUDE: 36.92917 **LONGTITUDE:** -79.60123

The segment starts at the mouth of Big Chestnut Creek and extends downstream to the mouth of Snow Creek. The segment spans the Penhook and Sandy Level Quads.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Swimming Use
Fecal coliform bacteria are abundant enough that this segment only partially supports the swimming use. Station 4APGG030.62 (Rt. 646, Fralin Bridge) found four of 23 samples exceeding the 1000 n/100 ml instantaneous criterion.

Aquatic Life Use
Station 4APGG030.62 (Rt. 646, Fralin Bridge) records two of 17 samples in exceedance of the 0.20 mg/l total phosphorus threshold. Both exceedances occur in January 1998 and 1999 at 0.30 mg/l.

IMPAIRMENT SOURCE NPS - Agriculture

The source of both the fecal coliform bacteria and total phosphorus are believed to be agricultural nonpoint source pollution.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Pittsylvania

STREAM NAME: Snow Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L17R_SNW01A00

SEGMENT SIZE: 10.98 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2004 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Snow Br./Ditto Br. Confluence.

RIVER MILE: 10.98

LATITUDE: 36.87722 **LONGTITUDE:** -79.68745

DOWNSTREAM LIMIT:

DESCRIPTION: Snow Cr. mouth on Pigg R.

RIVER MILE: 0.00

LATITUDE: 36.92917 **LONGTITUDE:** -79.60123

The upstream limit of this segment is the Ditto Branch confluence on Snow Creek. The segment end is at the mouth of Snow Creek on the Pigg River. The segment spans the Penhook and Sandy Level Quads.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

These waters are listed for fecal coliform bacteria in the 1998 Plaintiffs Attachment B for consideration in development of the 2002 303(d) Listing. Exceedances of the instantaneous fecal coliform bacteria criterion of 1000 n/100 ml are found at station 4ASNW000.60, Kirby Ford Bridge. Five of 22 samples exceed the criterion. The segment only partially supports the swimming use.

IMPAIRMENT SOURCE NPS - Agriculture

The source of fecal coliform bacteria is believed to be agricultural nonpoint source runoff.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Pittsylvania

STREAM NAME: Pigg River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L18R_PGG02A00

SEGMENT SIZE: 13.38 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2004 - 2006

UPSTREAM LIMIT:

DESCRIPTION: Snow Cr. mouth on the Pigg R.

RIVER MILE: 17.45

LATITUDE: 36.92917 **LONGTITUDE:** -79.60118

DOWNSTREAM LIMIT:

DESCRIPTION: Backwaters of Leesville Lake

RIVER MILE: 4.07

LATITUDE: 36.98861 **LONGTITUDE:** -79.51589

The segment extends from the mouth of Snow Creek on the Pigg River downstream to the backwaters of Leesville Lake. The entire segment is on the Sandy Level Quad.

Note: A lower portion of the 1998 listed segment is incorporated by watershed L13L (Leesville Lake). Other slight mileage adjustments are due to the use of the National Hydrography Dataset (NHD).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Swimming Use
Fecal coliform bacteria cause the segment to not support the swimming use. The segment incorporates station 4APGG003.29 (Rt. 605 Bridge). Six of 23 samples exceed the 1000 n/100 ml instantaneous criterion.

Fish Consumption Use
A Tier 2 fish tissue study (1993 Roanoke River Basin Study DEQ, Water Research & Standards, Richmond, Virginia) found polychlorinated biphenyls (PCBs) in one of five species at 4APGG003.29 in excess of the EPA human health-risk carcinogenic screening value (SV) of 54 parts per billion (ppb); Walleye (65.6 max.), a total of 50 fish were collected. The waters are fully supporting, but threatened for the fish consumption use based the exceedance of the EPA SV for PCBs.

1999 fish tissue collections found no exceedances from a total of 22 fish. Species include Largemouth Bass, Carp, Yellow Perch and Redhorse Sucker. No Walleye were collected.

IMPAIRMENT SOURCE NPS - Agriculture

Swimming Use

The believed source of fecal coliform bacteria is primarily agricultural nonpoint source runoff. Wildlife contributions are possible in the mostly rural watershed.

Fish Consumption Use
The exact sources of the PCB contamination are unknown.

The Virginia Department of Health (VDH) action level for PCBs is 600 ppb in fish tissue. The Virginia Department of Health review of the 1993 study by the Toxic Substances Program reports ". . . that none of the contaminants, at reported concentrations, poses an imminent threat to human health from consuming fish." (January 17, 1997, letter from Khizar Wasti, Director, Division of Health Hazards Control, VDH to Alan Anthony, Director, Water Research & Standards, DEQ).

PCBs are a group of man-made industrial chemicals that exist as a mixture and may contain up to 209 individual compounds. Since 1977, PCBs have not been produced in the U.S., but are still found in the environment. PCBs were once widely used as coolants and lubricants in transformers, capacitors and other electrical equipment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Campbell, Pittsylvania

STREAM NAME: Staunton (Roanoke) River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAC-L30R_ROA08A00

SEGMENT SIZE: 29.17 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Leesville Dam

RIVER MILE: 140.02

LATITUDE: 37.09389 **LONGTITUDE:** -79.39972

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth of Seneca Creek

RIVER MILE: 110.85

LATITUDE: 37.08972 **LONGTITUDE:** -79.12333

Staunton (Roanoke) River mainstem from Leesville Dam downstream to the mouth of Senaca Creek.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Fish Consumption Use - Partially Supporting, Fish Consumption Use - Threatened

IMPAIRMENT CAUSE: Fish Tissue - PCBs (heptachlor epoxide - 15.20 miles), Organics in fish tissue - Partial (H. epoxide - 15.20 miles), Organics in fish tissue - Threatened (H. epoxide - 3.44 miles)

The Virginia Department of Health (VDH) has issued a 'Health Advisory' for fishing in this segment of the Staunton (Roanoke) River based on fish tissue analysis. The segment only 'Partially Supports' the fish consumption use for Smallmouth Bass, Channel Catfish, Flathead Catfish, Striped Bass, White Bass, and Carp. Fish tissue analysis reveals PCB levels high enough for issuance of an advisory. The VDH advises limiting the amount of fish consumed to two 8 oz. portions per month. Young children and pregnant women are advised not to eat any of these fish. The total VDH 'Health Advisory' extends from Leesville Dam on downstream below Clover, Virginia; 5.4 miles downstream of the Route 360 Bridge. A total length of approximately 84 miles.

Exceedance of the US EPA human health-risk based screening value (SV) of 54 parts per billion (ppb) for polychlorinated biphenyls (PCBs) is found in four species downstream of Leesville Dam in 1997. Values reported, in parts per billion (ppb), are from one Carp (57.5) , one Channel Catfish (111), one Flathead Catfish (311) and one Redhorse Sucker (164 ppb).

1998 fish tissue collections at station 4AROA125.59, Mansion Bridge in Campbell County, Rt. 640, also record SV exceedances from six species. SV exceedances in ppb were one Carp (309), four Channel Catfish (208 max.), one Flathead Catfish (72.6), one Redhorse Sucker (286), one Walleye (349) and two Smallmouth Bass (99 max.).

An additional 2002 Partial Support of the fish consumption use is also found within this segment, 15.20 miles from the mouth of the Big Otter River downstream to Seneca Creek. The total length extends from the mouth of the Big Otter River downstream to the mouth of Falling River; a distance of 30.29 miles. Exceedances of Heptachlor epoxide (SV 10 ppb) from 1998 fish tissue collections at station 4AROA125.59 (downstream of the Big Otter River) reveal 3 species above the SV. They are one Walleye 12.04, one Channel Cat - 25.03 and one Redhorse Sucker - 10.06 ppb. Station 4AROA108.09 in Long Island reports exceedances in 5 species; a Smallmouth Bass (23.99), two Channel Catfish (26.28 max.), three Flathead Catfish (95.93 max.), a Redhorse Sucker (15.22) and a Carp (25.01 ppb). And a single species at station 4AROA097.07 in Brookneal finds a Redhorse Sucker with 15.22 ppb.

1999 fish tissue collections at station 4AROA117.09 (near Taber) find 2 species in excess of the Heptachlor epoxide SV; a Redhorse Sucker 11.01 and a Channel Catfish 17.96 ppb. The VDH Advisory applies only to PCBs.

A 2002 Heptachlor epoxide 'Threatened' fish consumption use segment extends from Leesville Dam downstream to the confluence of Goose Creek (3.34 miles). Heptachlor epoxide is measured in a single species, Flathead Catfish, at 10.81 ppb.

Results of fish tissue and sediment sampling from the special PCB ongoing study in the Staunton (Roanoke) River are posted at the DEQ website, http://www.deq.state.va.us.

IMPAIRMENT SOURCE VDH Fish Consumption Advisory, Unknown, Unknown, Unknown

The exact source(s) of PCB contamination is unknown. One stormwater and one legacy industrial source has been identified in the segment. Investigations to discover potential sources continue as do fish tissue and sediment sampling studies.

The exact source of the Heptachlor epoxide is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Bedford, Campbell

STREAM NAME: Goose Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L22R_GSE01A00

SEGMENT SIZE: 10.04 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Crab Orchard Cr. mouth on Goose Cr.

RIVER MILE: 10.04

LATITUDE: 37.16167 **LONGTITUDE:** -79.48052

DOWNSTREAM LIMIT:

DESCRIPTION: Goose Cr. mouth on Roanoke (Staunton) R.

RIVER MILE: 0.00

LATITUDE: 37.11694 **LONGTITUDE:** -79.38384

The upstream limit of this segment is at the Rt. 626 bridge crossing Crab Orchard Creek. The downstream limit is Goose Creek's mouth on the Roanoke River. The segment spans the Huddleston and Leesville Quads.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

The segment only partially supports the swimming use. Exceedances of the fecal coliform bacteria criterion are found at station 4AGSE000.20, four of 23 samples exceed the 1000 n/100 ml instantaneous criterion. The station is located at the Rt. 630 Bridge in Campbell County.

IMPAIRMENT SOURCE NPS - Agriculture/Wildlife

The source of fecal coliform bacteria is believed to be agricultural nonpoint source runoff. Wildlife contributions are possible in this mostly rural watershed.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Bedford

STREAM NAME: Sheeps Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L23R_SEE02A00

SEGMENT SIZE: 7.92 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2000 - 2001

UPSTREAM LIMIT:

DESCRIPTION: Off Rt. 614 near Reba

RIVER MILE: 7.92

LATITUDE: 37.42833 **LONGTITUDE:** -79.64769

DOWNSTREAM LIMIT:

DESCRIPTION: Confluence with Stoney Cr.

RIVER MILE: 0.00

LATITUDE: 37.39028 **LONGTITUDE:** -79.55587

The upper limit is north of Reba, Va on Campbells Mountain off Rt. 614 (Montvale Quad). The downstream end is ~0.25 miles west of the Rt. 43 Bridge where Sheeps Creek and Stoney Creek join to form the Big Otter River (Peaks of Otter Quad).

Note: Slight changes in 1998 segment mileage are due to the use of the National Hydrography Dataset (NHD).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Swimming Use
The Sheep Creek fecal coliform bacteria Total Maximum Daily Load (TMDL) Study and allocation scenario is complete. The segment is therefore delisted for fecal coliform with the US Environmental Protection Agency (EPA) approval of the study on 02/02/2001. The entirety of the approved study and allocations can be viewed at http://www.deq.state.va.us. The next step in the process is the development of an Implementation Plan.

The original 303(d) Listing for fecal coliform in 1996 and again in 1998 was based on ambient data collections showing contravention of the 1000 n/100 ml fecal coliform standard in greater than 25 percent of the samples collected. The segment although delisted with the US EPA TMDL Study approval remains impaired for the swimming use.

The segment brackets station 4ASEE003.16 (at Rt. 680 Bridge, Bedford Co.) where eight of 23 samples exceed the 1000 n/100 ml fecal coliform bacteria criterion. The segment does not support the swimming use.

Aquatic Life Use
A 4.71 mile aquatic life use 'Threatened' segment extends from upstream of the Pennicks Mill community (37°23'31" / 079°37'14") downstream to the confluence of Sheeps and Stony Creeks. A single exceedance

from six sediment collections is found at station 4ASEE003.15. Silver (Ag, SV=3.7 ppm, max. 6) exceeds the 1995 NOAA effect range- median (ER-M) sediment screening value (SV). The exceedance is recorded in August 1997. The segment is fully supporting, but threatened for the aquatic life use.

IMPAIRMENT SOURCE NPS - Agriculture (Pasture & Grazing) / Wildlife

Agricultural and wildlife nonpoint source direct deposition are the primary sources of fecal coliform bacteria as determined by the TMDL Study in critical conditions.

The source of the sediment silver (Ag) exceedance is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Bedford

STREAM NAME: Elk Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L25R_ECR01A00

SEGMENT SIZE: 7.28 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2000 - 2002

UPSTREAM LIMIT:

DESCRIPTION: Near Rt. 643 Bridge west of Forest.

RIVER MILE: 7.28

LATITUDE: 37.34028 **LONGTITUDE:** -79.35910

DOWNSTREAM LIMIT:

DESCRIPTION: Elk Cr. mouth on the Big Otter R.

RIVER MILE: 0.00

LATITUDE: 37.31028 **LONGTITUDE:** -79.39403

The upper limit of the segment is near Rt. 643 west of Forest (Forest Quad). The downstream limit is Elk Creek's mouth on the Big Otter River (Goode Quad).

Note: Slight changes in 1998 segment mileage are due to the use of the National Hydrography Dataset (NHD).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Swimming Use
The Elk Creek fecal coliform bacteria Total Maximum Daily Load (TMDL) Study and allocation scenario is complete. The segment is therefore delisted for fecal coliform with the US Environmental Protection Agency (EPA) approval of the study on 02/02/2001. The entirety of the approved study and allocations can be viewed at http://www.deq.state.va.us. The next step in the process is development of an Implementation Plan.

The 1998 303(d) Listing basis for fecal coliform is based on ambient data collections showing contravention of the 1000 n/100 ml fecal coliform standard in greater than 25 percent of the samples collected. The segment, although delisted with the US EPA TMDL Study approval, remains impaired for the swimming use.

Fecal coliform bacteria cause the segment to only partially meet the swimming use. The segment brackets station 4AECR003.02 located at the Rt. 668 Bridge. Six of 25 samples exceed the 1000 n/100 ml instantaneous criterion.

Aquatic Life Use
Two total phosphorus exceedances of the 0.20 mg/l threshold from 18 samples cause the segment to be fully supporting, but threatened. Each exceedance is 0.30 mg/l occurring in September 1997 and April 2000. The segment brackets station 4AECR003.02 in Bedford County.

IMPAIRMENT SOURCE NPS - Agriculture/Urban

Agricultural and wildlife nonpoint source direct deposition are the primary sources of fecal coliform bacteria as determined by the TMDL Study at critical conditions. The upper portion of the watershed is experiencing population growth/urbanization in the Forest Area.

The source of total phosphorus is believed to be from agricultural nonpoint source runoff.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Bedford, Bedford, City of

STREAM NAME: Johns Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L26R_JHN01A00

SEGMENT SIZE: 2.13 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Near headwaters in Bedford City.

RIVER MILE: 2.13

LATITUDE: 37.33889 **LONGTITUDE:** -79.49389

DOWNSTREAM LIMIT:

DESCRIPTION: Johns Creek mouth on the Little Otter R.

RIVER MILE: 0.00

LATITUDE: 37.32833 **LONGTITUDE:** -79.46364

The segment begins near the headwaters of Johns Creek and extends downstream to its confluence with the Little Otter River. The segment spans the Bedford and Goode Quads.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Aquatic Life Use - Partially Supporting

IMPAIRMENT CAUSE: General Standard (Benthic)

The segment brackets biological station 4AJHN000.01, near the Johns Creek confluence with the Little Otter River. Benthic results show moderate impact to the benthic community from a total of three Rapid Bioassessment Protocol II (RBP II) surveys. The segment only partially supports the aquatic life use. The General Standard (benthic) impairment a 2002 addition.

IMPAIRMENT SOURCE NPS - Urban

The impairment source is believed to be primarily urban nonpoint source pollution. The impairment source is urban pump station overflows and possible agriculture nonpoint source runoff.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Bedford, Bedford, City of

STREAM NAME: Little Otter River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L26R_LOR05A00

SEGMENT SIZE: 27.03 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2000 - 2001

UPSTREAM LIMIT:

DESCRIPTION: Rt. 680 Cobbs Mountain

RIVER MILE: 27.03

LATITUDE: 37.37583 **LONGTITUDE:** -79.60824

DOWNSTREAM LIMIT:

DESCRIPTION: Little Otter R. mouth on the Big Otter R.

RIVER MILE: 0.00

LATITUDE: 37.27444 **LONGTITUDE:** -79.40525

The upper limit is west of Rt. 680 at Cobbs Mountain on the Peaks of Otter Quad. The downstream limit is the mouth of the Little Otter River on the Big Otter River.

Note: Slight changes in 1998 segment mileage are due to the use of the National Hydrography Dataset (NHD).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting, Fish Consumption Use - Partially Supporting, Aquatic Life Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform - 27.03 miles, Fish Tissue - PCBs - 14.36 miles, General Standard (Benthic) - 5.72 miles / Total phosphorus / Metals in sediment - 14.36 miles

Swimming Use
The Little Otter River fecal coliform bacteria Total Maximum Daily Load (TMDL) Study and allocation scenario is complete. The segment is therefore delisted for fecal coliform with the US Environmental Protection Agency (EPA) approval of the study on 02/02/2001. The entirety of the approved study and allocations can be viewed at http://www.deq.state.va.us. The next step in the process is development of an Implementation Plan.

The 1998 303(d) Listing basis for fecal coliform are ambient collections showing contravention of the 1000 n/100 ml fecal coliform standard in greater than 10 and 25 percent of the samples collected. The segment, although delisted with the US EPA TMDL Study approval, remains impaired for the swimming use. 2002 Assessment results are described below.

The total impaired segment includes stations 4ALOR014.75 (Rt. 718 Bridge above Bedford STP), 4ALOR010.78 (Rt. 460 Bridge) discontinued in June 1996 and 4ALOR008.64 (Rt. 784 Bridge). Fecal coliform bacteria cause partial support of the swimming use for 12.67 miles in the upper portions of the segment extending from the headwaters downstream to the Bedford STP outfall. Thirteen of 60 samples

exceed the 1000 n/100 ml instantaneous criterion at 4ALOR014.75. Station 4ALOR10.78 records five exceedances from eight samples of the remaining data causing nonsupport for 5.72 miles. 4ALOR008.64 reports 15 of 55 samples exceeding and thus nonsupport for the remaining 8.64 miles.

Fish Consumption Use
Fish tissue collections at 4ALOR007.94 found polychlorinated biphenyls (PCBs) in excess of the human health-risk carcinogenic screening value (SV) of 54 parts per billion (ppb) from two species; Carp 68.30 and Smallmouth Bass 54.8 ppb. Other sampled species record PCBs in Redhorse Sucker 28.50 and Redbreast Sunfish 8.21 ppb both below the SV. The waters partially support the fish consumption use for 14.36 miles from the Bedford STP (37°19'47" / 079°27'50") downstream to the Little Otter confluence with the Big Otter River. The fish consumption use impairment is added with the 2002 303(d) Listing.

Aquatic Life Use
Station 4ALOR014.33 finds moderate impacts to the biota below the Bedford STP and Johns Creek confluence with the Little Otter River. The waters are partially supporting for 5.72 miles. The segment begins at the Bedford STP outfall and extends downstream to the mouth of Poorhouse Creek (37°17'51" / 079°27'21"). The aquatic life use General Standard (Benthic) impairment is added with the 2002 303(d) Listing.

The waters are fully supporting, but threatened for 14.36 miles due to exceedance of the 0.20 mg/l total phosphorus threshold and a sediment metal effect range- median (ER-M) screening value (SV). The segment brackets stations 4ALOR010.78 and 4ALOR008.64. Total phosphorus exceedances at station 4ALOR010.78, a June 1996 discontinued station, reports two of eight samples exceed and 29 of 56 at 4ALOR008.64. The maxima range from 0.29 to 0.60 mg/l at 4ALOR010.78 and at 4ALOR008.64 maxima range from 0.3 to 1.50 mg/l. Station 4ALOR008.64 (Rt. 784 Bridge) reports an exceedance of the 1995 NOAA effect range- median (ER-M) sediment screening value (SV) for silver (Ag, SV=3.7 ppm, 1 of 3 samples max. 7). The exceedance occurs in 1997. The segment is fully supporting, but threatened for the aquatic life use for 14.36 miles from the Bedford STP outfall downstream to the Little Otter confluence with the Big Otter River.

IMPAIRMENT SOURCE NPS - Agriculture/Urban, NPS - Agriculture/Urban, NPS - Urban/Agriculture

Swimming Use
The TMDL Study lists impairment sources as pasture land and direct deposition from cattle as the primary contributors. Wildlife is also noted as a secondary contributor.

Fish Consumption Use
The exact sources of the PCB contamination are unknown.

The Virginia Department of Health (VDH) action level for PCBs is 600 ppb in fish tissue. PCBs are a group of man-made industrial chemicals that exist as a mixture and may contain up to 209 individual compounds. Since 1977, PCBs have not been produced in the U.S., but are still found in the environment. PCBs were once widely used as coolants and lubricants in transformers, capacitors and other electrical equipment.

Aquatic Life Use
The General Standard (Benthic) impairment is believed due to urban storm runoff and sewage overflows along Johns Creek.

Total phosphorus exceedances are believed due to point source as well as nonpoint source urban runoff.

The source of the sediment metals exceedance is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Bedford

STREAM NAME: Machine Creek

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L26R_MCR01A00

SEGMENT SIZE: 11.33 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2000 - 2001

UPSTREAM LIMIT:

DESCRIPTION: Intersection of Rts. 24 & 732

RIVER MILE: 11.33

LATITUDE: 37.22444 **LONGTITUDE:** -79.49509

DOWNSTREAM LIMIT:

DESCRIPTION: Machine Cr. mouth on Little Otter R

RIVER MILE: 0.00

LATITUDE: 37.28250 **LONGTITUDE:** -79.44021

The segment begins upstream near the intersection of Routes 24 and 732 on the Huddleston Quad, and extend to Machine Creek's mouth on the Little Otter River.

Note: 1998 segment mileage for Machine Creek (20 miles) was carried from 1996 in error. The National Hydrography Dataset was used for determination of segment mileage.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Swimming Use
The Little Otter River fecal coliform bacteria Total Maximum Daily Load (TMDL) Study and allocation scenario is complete. Machine Creek is tributary to the Little Otter River and is included in the TMDL Study. The segment is therefore delisted for fecal coliform with the US Environmental Protection Agency (EPA) approval of the study on 02/02/2001. The entirety of the approved study and allocations can be viewed at http://www.deq.state.va.us. The next step in the process is development of an Implementation Plan. 2002 Assessment data are below.

Fecal coliform bacteria caused failure of the segment to meet the swimming use. The segment brackets the June 1996 discontinued ambient station at 4AMCR004.60 (Rt. 804 Bridge) where four of six samples exceed the 1000 n/100 ml instantaneous criterion.

IMPAIRMENT SOURCE NPS - Agriculture

The TMDL Study identifies the primary source of the impairment as agricultural nonpoint sources from direct deposition by cattle and pasture land. Wildlife are also noted as contributing to the impairment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Bedford

STREAM NAME: Big Otter River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAW-L27R_BOR01A00

SEGMENT SIZE: 5.39 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2000 - 2001

UPSTREAM LIMIT:

DESCRIPTION: Little Otter R. mouth on Big Otter R.

RIVER MILE: 19.37

LATITUDE: 37.27444 **LONGTITUDE:** -79.40525

DOWNSTREAM LIMIT:

DESCRIPTION: Buffalo Cr. mouth on the Big Otter R.

RIVER MILE: 13.98

LATITUDE: 37.23528 **LONGTITUDE:** -79.32663

The segment begins at the mouth of the Little Otter River on the Big Otter River extending downstream to the confluence of Buffalo Creek with the Big Otter River. The segment spans the Goode, Forest and Lynch Station Quads.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Swimming Use

The Big Otter River fecal coliform bacteria Total Maximum Daily Load (TMDL) Study and allocation scenario is complete. The TMDL study encompasses the drainage in watershed VAW-L27R. No swimming use impairments were noted in the 1998 303(d) List for the Big Otter River in watershed VAW-L27R. However the TMDL Study states that upstream watershed implemetation and elimination of straight pipes will result in achievement of the water quality standard. The segment is therefore delisted, eg. not in need of a TMDL Study, with the US Environmental Protection Agency (EPA) approval of the study on 02/02/2001. The 2002 5.39 mile fecal coliform portion is added to the original 1998 303(d) Listing (13.98 miles) for a total of 19.37 miles. The entire swimming impaired segment spans from the mouth of Little Otter River on the Big Otter downstream the Big Otter River confluence with the Staunton (Roanoke) River. The entirety of the approved study and allocations can be viewed at http://www.deq.state.va.us. 2002 Assessment data are below.

Exceedances of the fecal coliform bacteria instantaneous criterion of 1000 n/100 ml are found at station 4ABOR016.26 (Rt. 24 Bridge). Four of 21 samples exceed. The segment does not support the swimming use. A 2002 addition.

Fish Consumption Use

Fish tissue collections at 4ABOR012.18 (VAW-L28R) found polychlorinated biphenyls (PCBs) in excess of the human health-risk carcinogenic screening value (SV) of 54 parts per billion (ppb) in one species; Redhorse Sucker @ 60.60 ppb. Other sampled species record PCBs in Redbreast Sunfish @ 4.10 and Roanoke

Hogsucker @ 0.64 ppb both below the SV. The waters are fully supporting, but threatened for a total of 19.37 miles.

IMPAIRMENT SOURCE NPS - Agriculture

Swimming Use
The source of fecal coliform bacteria is believed to be agricultural nonpoint source runoff from upstream watersheds primarily direct deposition from cattle and pasture land runoff. Wildlife contributions are also noted in the TMDL Study.

Fish Consumption Use
The exact source(s) of PCB contamination are unknown.

The Virginia Department of Health (VDH) action level for PCBs is 600 ppb in fish tissue. PCBs are a group of man-made industrial chemicals that exist as a mixture and may contain up to 209 individual compounds. Since 1977, PCBs have not been produced in the U.S., but are still found in the environment. PCBs were once widely used as coolants and lubricants in transformers, capacitors and other electrical equipment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Campbell

STREAM NAME: Big Otter River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAC-L28R_BOR01A00

SEGMENT SIZE: 9.4 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 1998 - 2001

UPSTREAM LIMIT:

DESCRIPTION: Flat Creek mouth on Big Otter River

RIVER MILE: 9.40

LATITUDE: 37.13250 **LONGTITUDE:** -79.25194

DOWNSTREAM LIMIT:

DESCRIPTION: Big Otter River confluence with Roanoke River

RIVER MILE: 0.00

LATITUDE: 37.19389 **LONGTITUDE:** -79.27083

The segment begins at the mouth of Flat Creek on the Big Otter River and ends at the mouth of the Big Otter River on the Staunton (Roanoke) River. The segment spans the Lynch Station and Castle Craig Quads.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Big Otter River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 14/61 samples taken at 4-ABOR000.6. Exceedance of the US EPA human health-risk based screening value (SV) of 50 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in fish tissue was recorded in species from collected fish samples.

IMPAIRMENT SOURCE NPS - Agriculture

The major source of the fecal coliform is pasture grazing.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Campbell

STREAM NAME: Big Otter River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAC-L28R_BOR03A00

SEGMENT SIZE: 2.38 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** - 2001

UPSTREAM LIMIT:

DESCRIPTION: Buffalo Cr. mouth on the Big Otter R.

RIVER MILE: 13.98

LATITUDE: 37.23528 **LONGTITUDE:** -79.32663

DOWNSTREAM LIMIT:

DESCRIPTION: Campbell County USA Otter River WTP

RIVER MILE: 11.6

LATITUDE: 37.20722 **LONGTITUDE:** -79.30056

Big Otter River mainstem from the Buffalo Creek mouth on Big Otter River downstream to the Campbell County USA Otter River WTP.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Big Otter River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 14/61 samples taken at 4-ABOR000.6. Exceedance of the US EPA human health-risk based screening value (SV) of 54 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in fish tissue was recorded in species from collected fish samples.

IMPAIRMENT SOURCE NPS - Agriculture

The major source of the fecal coliform is pasture grazing.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Campbell

STREAM NAME: Big Otter River

HYDROLOGIC UNIT: 03010101

SEGMENT ID.: VAC-L28R_BOR02A00

SEGMENT SIZE: 2.2 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 1998 - 2001

UPSTREAM LIMIT:

DESCRIPTION: Campbell County USA Otter River WTP

RIVER MILE: 11.60

LATITUDE: 37.20722 **LONGTITUDE:** -79.30056

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth of Flat Creek

RIVER MILE: 9.40

LATITUDE: 37.19944 **LONGTITUDE:** -79.28472

Big Otter River mainstem from the Campbell County USA Otter River WTP downstream to mouth of Flat Creek.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Big Otter River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 14/61 samples taken at 4-ABOR000.6. Exceedance of the US EPA human health-risk based screening value (SV) of 50 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in fish tissue was recorded in species from collected fish samples.

IMPAIRMENT SOURCE NPS - Agriculture

The major source of the fecal coliform is pasture grazing.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Campbell, Pittsylvania

STREAM NAME: Staunton (Roanoke) River

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L30R_ROA06A00

SEGMENT SIZE: 7.01 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Seneca Creek mouth

RIVER MILE: 110.85

LATITUDE: 37.08972 **LONGTITUDE:** -79.12333

DOWNSTREAM LIMIT:

DESCRIPTION: Buffalo Creek mouth

RIVER MILE: 103.84

LATITUDE: 37.03861 **LONGTITUDE:** -79.02111

Staunton (Roanoke) River mainstem from the Senaca Creek mouth downstream to the Buffalo Creek confluence.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Fish Consumption Use - Partially Supporting, Fish Consumption Use - Threatened

IMPAIRMENT CAUSE: VDH Health Advisory (PCBs) Exceedance of Fish Tissue SV, PCBs, Organics in fish tissue (H. epoxide - 7.01 miles)

The Virginia Department of Health (VDH) has issued a 'Health Advisory' for fishing in this segment of the Staunton (Roanoke) River based on fish tissue analysis. The segment only partially supports the fish consumption use for Smallmouth Bass, Channel Catfish, Striped Bass, White Bass and Carp. Fish tissue analysis reveals polychlorinated biphenyls (PCBs) levels high enough for issuance of an advisory. The VDH advises limiting the amount of fish consumed to two 8 oz. portions per month. Young children and pregnant women are advised not to eat any of these fish. The total VDH 'Health Advisory' extends from Leesville Dam on downstream below Clover, Virginia; 5.4 miles downstream of the Route 360 Bridge. A total length of approximately 84 miles.

Exceedance of the US EPA human health-risk based screening value (SV) of 54 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in fish tissue is found at 4AROA097.07 (8 species) and 4AROA096.62 (1 species).

An additional 2002 Partial Support of the fish consumption use is also found within this segment, 7.01 miles from Seneca Creek to Buffalo Creek. The total length extends from the mouth of the Big Otter River downstream to the mouth of Falling River; a distance of 30.29 miles. Exceedances of Heptachlor epoxide (SV 10 ppb) from 1998 fish tissue collections at station 4AROA125.59 (downstream of the Big Otter River) reveal 3 species above the SV. They are one Walleye 12.04, one Channel Cat - 25.03 and one Redhorse Sucker - 10.06 ppb. Station 4AROA108.09 in Long Island reports exceedances in 5 species; a Smallmouth Bass (23.99), two Channel Catfish (26.28 max.), three Flathead Catfish (95.93 max.), a Redhorse Sucker (15.22)

and a Carp (25.01 ppb). And a single species at station 4AROA097.07 in Brookneal finds a Redhorse Sucker with 15.22 ppb.

1999 fish tissue collections at station 4AROA117.09 (near Taber) find 2 species in excess of the SV; a Redhorse Sucker 11.01 and a Channel Catfish 17.96 ppb. The VDH Advisory applies only to PCBs.

Results of fish tissue and sediment sampling from the special PCB ongoing study in the Staunton (Roanoke) River are posted at the DEQ website, http://www.deq.state.va.us.

IMPAIRMENT SOURCE VDH Fish Consumption Advisory, Unknown

The exact source(s) of PCB contamination is unknown. One stormwater and one legacy industrial source has been identified in the segment. Investigations to discover potential sources continue as do fish tissue and sediment sampling studies.

The exact source(s) of heptachlor epoxide are unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Campbell, Halifax, Charlotte

STREAM NAME: Staunton (Roanoke) River

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L30R_ROA05A00

SEGMENT SIZE: 47.72 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Buffalo Creek mouth

RIVER MILE: 103.84

LATITUDE: 37.03861 **LONGTITUDE:** -79.02111

DOWNSTREAM LIMIT:

DESCRIPTION: Pipeline crossing approximately 5.4 miles downsteam of the Route 360 bridge

RIVER MILE: 56.12

LATITUDE: 37.03778 **LONGTITUDE:** -78.99611

Staunton (Roanoke) River mainstem from the Buffalo Creek mouth downstream to 5.4 miles downstream of the Route 360 Bridge.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting, Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, VDH Health Advisory (PCBs), (Heptachlor epoxide - 8.08 miles)

This segment of Staunton (Roanoke) River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceed the 1000 /100 ml instantaneous criterion in 9/60 samples at 4AROA097.46, 4/27 at 4AROA067.91 and in 12/57 samples at 4AROA059.12. The upper portions of the fecal coliform impairment in watershed VAC-L30R are new in 2002.

The Virginia Department of Health (VDH) has issued a 'Health Advisory' for fishing in this segment of the Staunton (Roanoke) River based on fish tissue analysis. The segment only 'Partially Supports' the fish consumption use for Smallmouth Bass, Channel Catfish, Flathead Catfish, Striped Bass, White Bass, and Carp. Fish tissue analysis reveals PCB levels high enough for issuance of an advisory. The VDH advises limiting the amount of fish consumed to two 8 oz. portions per month. Young children and pregnant women are advised not to eat any of these fish. The total VDH 'Health Advisory' extends from Leesville Dam on downstream below Clover, Virginia; 5.4 miles downstream of the Route 360 Bridge. A total length of approximately 84 miles.

Exceedance of the US EPA human health-risk based screening value (SV) of 54 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in fish tissue is found from 1998 collections at 4AROA097.07 (8 species), 4AROA096.62 (1 species), 4AROA067.91 (3 species) and 4AROA052.69 (4 species).

1999 fish tissue results also find PCB SV exceedances at 4AROA067.91 (3 species), 4AROA052.69 (8 species).

An additional Partial Support of the fish consumption use is also found within this segment, 8.08 miles from Buffalo Creek to Falling River. The total length extends from the mouth of the Big Otter River downstream to the mouth of Falling River; a distance of 30.29 miles. Exceedances of Heptachlor epoxide (SV 10 ppb) from 1998 fish tissue collections at station 4AROA108.09 in Long Island reports exceedances in 5 species; a Smallmouth Bass (23.99), two Channel Catfish (26.28 max.), three Flathead Catfish (95.93 max.), a Redhorse Sucker (15.22) and a Carp (25.01 ppb). And a single species at station 4AROA097.07 in Brookneal finds a Redhorse Sucker with 15.22 ppb.

A 10.91 mile aquatic life use 'Threatened' segment extends from the Buffalo Creek confluence downstream to the mouth of Childrey Creek on the Staunton (Roanoke) River (36°59'24" / 78°54'01"). Exceedance of the 1995 NOAA effect-range median (ER-M) screening value for PCBs (180 ppb) is found in sediment samples at 4AROA097.21, 4AROA097.07 & 4AROA096.62.

Results of fish tissue and sediment sampling from the special PCB ongoing study in the Staunton (Roanoke) River are posted at the DEQ website, http://www.deq.state.va.us.

IMPAIRMENT SOURCE NPS - Agriculture/Urban, VDH Fish Consumption Advisory, Unknown, Unknown

The source of the fecal coliform is agriculture and urban runoff. The exact source(s) of PCB and Heptachlor epoxide are unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Campbell

STREAM NAME: Falling River

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L34R_FRV01A00

SEGMENT SIZE: 2.94 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2002 - 2004

UPSTREAM LIMIT:

DESCRIPTION: Brookneal Lagoon POTW

RIVER MILE: 2.94

LATITUDE: 37.05111 **LONGTITUDE:** -78.93361

DOWNSTREAM LIMIT:

DESCRIPTION: Falling River mouth

RIVER MILE: 0.00

LATITUDE: 37.02250 **LONGTITUDE:** -78.90444

Falling River mainstem from the Brookneal Lagoon POTW downstream to the Falling River mouth on the Roanoke (Staunton) River.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Falling River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 3/22 samples taken at 4AFRV002.78.

IMPAIRMENT SOURCE NPS - Agriculture/Urban

The source of the fecal coliform is agriculture and urban runoff/storm sewers.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Campbell

STREAM NAME: Falling River, Middle

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L34R_FRV03A00

SEGMENT SIZE: 4.37 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2002 - 2004

UPSTREAM LIMIT:

DESCRIPTION: Little Falling River mouth

RIVER MILE: 7.56

LATITUDE: 37.10028 **LONGTITUDE:** -78.94722

DOWNSTREAM LIMIT:

DESCRIPTION: Dan River, Inc. intake

RIVER MILE: 3.19

LATITUDE: 37.05500 **LONGTITUDE:** -78.93500

Little Falling River mouth downstream to Dan River, Inc. intake on Falling River.

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Falling River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 3/22 samples taken at 4AFRV002.78.

IMPAIRMENT SOURCE NPS - Agriculture/Urban

The source of the fecal coliform is agriculture and urban runoff/storm sewers.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Campbell

STREAM NAME: Falling River

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L34R_FRV02A00

SEGMENT SIZE: 0.32 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2002 - 2004

UPSTREAM LIMIT:

DESCRIPTION: Dan River Inc. water intake on Falling River

RIVER MILE: 3.17

LATITUDE: 37.05500 **LONGTITUDE:** -78.93500

DOWNSTREAM LIMIT:

DESCRIPTION: Brookneal Lagoon outfall

RIVER MILE: 2.85

LATITUDE: 37.05111 **LONGTITUDE:** -78.93361

Dan River Inc. water intake on Falling River downstream to the Brookneal Lagoon outfall.

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Falling River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 3/22 samples taken at 4AFRV002.78.

IMPAIRMENT SOURCE NPS - Agriculture/Urban

The source of the fecal coliform is agriculture and urban runoff/storm sewers.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Campbell

STREAM NAME: Falling River, Upper

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L34R_FRV06A02

SEGMENT SIZE: 2.86 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2002 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Falling River North and South Fork confluence

RIVER MILE: 11.66

LATITUDE: 37.13944 **LONGTITUDE:** -78.97083

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth of Mollys Creek

RIVER MILE: 8.80

LATITUDE: 37.11750 **LONGTITUDE:** -78.96056

Falling River mainstem from the Falling River North and South Fork confluence downstream to the mouth of Mollys Creek.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Falling River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 3/22 samples taken at 4AFRV017.71.

IMPAIRMENT SOURCE NPS - Agriculture

The source of the fecal coliform is agriculture.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Charlotte, Halifax

STREAM NAME: Turnip Creek

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L36R_TIP01A00

SEGMENT SIZE: 2.7 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Buck Branch

RIVER MILE: 2.70

LATITUDE: 37.01500 **LONGTITUDE:** -78.85167

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth at Roanoke River

RIVER MILE: 0.00

LATITUDE: 36.98389 **LONGTITUDE:** -78.84361

Turnip Creek from Buck Branch downstream to its mouth at the Roanoke River.

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Turnip Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 4/27samples taken at 4ATIP002.55.

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Charlotte, Halifax

STREAM NAME: Roanoke River

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L36R_ROA01A98

SEGMENT SIZE: 14.03 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Childrey Creek

RIVER MILE: 91.22

LATITUDE: 36.99028 **LONGTITUDE:** -78.90056

DOWNSTREAM LIMIT:

DESCRIPTION: Cub Creek

RIVER MILE: 77.19

LATITUDE: 37.00000 **LONGTITUDE:** -78.75944

Roanoke River from Childrey Creek to Cub Creek

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting, Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, PCBs

This segment of Roanoke River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 4/27 samples taken at 4AROA067.91. The segment is partially supporting the fish consumption use due to a Fish Consumption Advisory issued by Virginia Department of Health (VDH) on 12/02/99. Striped bass, white bass, Smallmouth bass, channel catfish, flathead catfish, and carp taken from these waters may contain PCBs. VDH advises eating no more than two 8 oz portions of these fish per month.

IMPAIRMENT SOURCE Unknown, VDH Fish Consumption Advisory

The source of fecal coliform is unknown. The exact source of PCB contamination is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Charlotte

STREAM NAME: Cub Creek

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L37R_CUB01A00

SEGMENT SIZE: 13.71 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Big Cub Creek

RIVER MILE: 20.88

LATITUDE: 37.20389 **LONGTITUDE:** -78.73444

DOWNSTREAM LIMIT:

DESCRIPTION: Terrys Creek

RIVER MILE: 8.30

LATITUDE: 37.06167 **LONGTITUDE:** -78.74361

Cub Creek from Big Cub Creek to Terrys Creek

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Cub Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 7/44 samples taken at 4ACUB010.96

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Charlotte

STREAM NAME: Roanoke River

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L38R_ROA02A98

SEGMENT SIZE: 12.58 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Cub Creek

RIVER MILE: 77.19

LATITUDE: 36.98389 **LONGTITUDE:** -78.84361

DOWNSTREAM LIMIT:

DESCRIPTION: Little Roanoke Creek

RIVER MILE: 64.61

LATITUDE: 36.90139 **LONGTITUDE:** -78.71889

Roanoke River from Cub Creek to Little Roanoke Creek

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting, Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, PCBs

This segment of Roanoke River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 4/27 samples taken at 4AROA067.91. The segment is partially supporting the fish consumption use due to a Fish Consumption Advisory issued by Virginia Department of Health (VDH) on 12/02/99. Striped bass, white bass, Smallmouth bass, channel catfish, flathead catfish, and carp taken from these waters may contain PCBs. VDH advises eating no more than two 8 oz portions of these fish per month.

IMPAIRMENT SOURCE Unknown, VDH Fish Consumption Advisory

The source of fecal coliform is unknown. The exact source of PCB contamination is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Charlotte

STREAM NAME: Wards Fork Creek

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L39R_WFC01A00

SEGMENT SIZE: 5.73 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Unnamed tributary at RM 5.73

RIVER MILE: 5.73

LATITUDE: 37.02806 **LONGTITUDE:** -78.68167

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth

RIVER MILE: 0.00

LATITUDE: 36.98889 **LONGTITUDE:** -78.64972

Wards Fork Creek from the unnamed tributary at river mile 5.73 downstream to its mouth at Roanoke Creek.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Wards Fork Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 5/27 samples taken at 4AWFC002.12.

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Charlotte

STREAM NAME: Horsepen Creek

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L39R_HEN01A00

SEGMENT SIZE: 1.84 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Little Horsepen Creek

RIVER MILE: 3.48

LATITUDE: 36.91972 **LONGTITUDE:** -78.63972

DOWNSTREAM LIMIT:

DESCRIPTION: Reynolds Creek

RIVER MILE: 1.64

LATITUDE: 36.90250 **LONGTITUDE:** -78.65833

Horsepen Creek from Little Horsepen Creek downstream to Reynolds Creek

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Horsepen Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 4/25 samples taken at 4AHEN002.16.

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Charlotte

STREAM NAME: Twittys Creek

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L39R_TWT01A98

SEGMENT SIZE: 7.25 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2004

UPSTREAM LIMIT:

DESCRIPTION: WestPoint Stevens-Drakes Discharge

RIVER MILE: 7.25

LATITUDE: 36.99583 **LONGTITUDE:** -78.59667

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth

RIVER MILE: 0.00

LATITUDE: 36.92639 **LONGTITUDE:** -78.66667

Twittys Creek from WestPoint Stevens-Drakes discharge downstream to its mouth at Roanoke Creek.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Aquatic Life Use - Partially Supporting

IMPAIRMENT CAUSE: General Standard (Benthic)

Segment was assessed partially supporting of the Aquatic Life use support goal based on a moderately impaired biological assessment for the 2002 305(b) cycle.

IMPAIRMENT SOURCE PS - Municipal, PS - Industrial

The impairment is attributed to siltation from municipal and industrial point sources in this segment.

The Westpoint Stevens - Drakes Branch Wastewater Treatment Plant was upgraded in 2001. Additional monitoring is recommended to gauge the effects of the upgrade on benthic communities in this segment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Charlotte

STREAM NAME: Ash Camp Creek

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L39R_ACC01A98

SEGMENT SIZE: 2.36 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2004

UPSTREAM LIMIT:

DESCRIPTION: Route 654 bridge

RIVER MILE: 2.60

LATITUDE: 37.03611 **LONGTITUDE:** -78.58472

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth

RIVER MILE: 0.00

LATITUDE: 37.03806 **LONGTITUDE:** -78.60056

Ash Camp Creek from the Route 654 bridge to its mouth at Roanoke Creek.

CLEAN WATER ACT GOAL AND USE SUPPORT:
Aquatic Life Use - Partially Supporting

IMPAIRMENT CAUSE: General Standard (Benthic)

This segment of Ash Camp Creek was assessed partially supporting of the Aquatic Life use support goal based on moderately impaired benthic assessment for the 2002 305(b) cycle.

IMPAIRMENT SOURCE PS - Municipal

The impairment in this segment is attributed to siltation from a municipal point source in the segment.

As part of a special study, targeted monitoring was performed in December 2001 and January 2002 to help identify sources of benthic impairment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Charlotte, Halifax

STREAM NAME: Sandy Creek

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L40R_SDY01A00

SEGMENT SIZE: 3.34 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Headwaters

RIVER MILE: 5.32

LATITUDE: 36.84167 **LONGTITUDE:** -78.63389

DOWNSTREAM LIMIT:

DESCRIPTION: Sandy Creek at river mile 1.98

RIVER MILE: 1.98

LATITUDE: 36.85972 **LONGTITUDE:** -78.59083

Sandy Creek from its headwaters to river mile 1.98, near the confluence with Berles Creek

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This upstream segment of Sandy Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 2/11samples taken at 4ASLA002.69.

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Charlotte

STREAM NAME: Berles Creek

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L40R_BRL01A00

SEGMENT SIZE: 2.18 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Headwaters

RIVER MILE: 2.18

LATITUDE: 36.84083 **LONGTITUDE:** -78.59972

DOWNSTREAM LIMIT:

DESCRIPTION: Sandy Creek

RIVER MILE: 0.00

LATITUDE: 36.84139 **LONGTITUDE:** -78.63444

Berle Creek from its headwaters to Sandy Creek.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Berles Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 1/5 samples taken at PL-26B. This is a confined animal feeding operation (CAFO) special study station.

IMPAIRMENT SOURCE Unknown

Source is unknown. There is not enough data to determine if the CAFO facility is the source of impairment in this segment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Charlotte, Halifax

STREAM NAME: Buffalo Creek, UT

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L40R_XUT01A00

SEGMENT SIZE: 2.88 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Headwaters

RIVER MILE: 2.88

LATITUDE: 36.78028 **LONGTITUDE:** -78.63500

DOWNSTREAM LIMIT:

DESCRIPTION: Buffalo Creek

RIVER MILE: 0.00

LATITUDE: 36.78028 **LONGTITUDE:** -78.62944

Unnamed tributary to Buffalo Creek from headwaters to Buffalo Creek

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

The unnamed tributary to Buffalo Creek is not supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 3/11 samples taken at 4AXMC000.54.

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Charlotte, Halifax

STREAM NAME: Staunton (Roanoke) River

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L40R_ROA04A98

SEGMENT SIZE: 7.04 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: 5.4 miles downstream of Route 360 bridge

RIVER MILE: 54.58

LATITUDE: 36.77139 **LONGTITUDE:** -78.67000

DOWNSTREAM LIMIT:

DESCRIPTION: Kerr Reservoir

RIVER MILE: 47.54

LATITUDE: 36.69778 **LONGTITUDE:** -78.64709

Staunton (Roanoke) River from the pipeline crossing about 5.4 miles downstream of the Route 360 bridge to the backwaters of Kerr Reservoir.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting, Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, Organics in fish tissue (PCBs)

This segment of Staunton (Roanoke) River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 12/57 samples taken at 4AROA059.12.

This 2002 segment is partially supporting the fish consumption use due to exceedance of the EPA human health-risk carcenogenic screening value of 54 parts per billion (ppb) for polychlorinated biphenyls (PCBs). This segment is downstream of the Virginia Department of Health (VDH) Fish Consumption Advisory issued on 12/02/99. 1998 fish tissue collections at 4AROA059.12 reveal 4 species exceeding the SV. They are Spotted Bass, Channel Catfish, Redhorse Sucker and Carp. 1999 collections at the same site found eight species exceeding the SV. These species are Carp, Channel Catfish, Flathead Catfish, Largemouth Bass, Striped Bass, Walleye, White Bass and White Perch.

IMPAIRMENT SOURCE NPS - Agriculture/Urban, Unknown

The source of fecal coliform is unknown. The exact source(s) of PCB contamination is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Halifax

STREAM NAME: Difficult Creek

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L41R_DFF02A98

SEGMENT SIZE: 4.49 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2004

UPSTREAM LIMIT:

DESCRIPTION: Ashcake Creek

RIVER MILE: 4.49

LATITUDE: 36.77972 **LONGTITUDE:** -78.72250

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth

RIVER MILE: 0.00

LATITUDE: 36.74444 **LONGTITUDE:** -78.68944

Difficult Creek from Ashcake Creek to its mouth at the Roanoke River.

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Difficult Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 3/27 samples taken at 4ADFF002.02.

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Patrick

STREAM NAME: South Mayo River

HYDROLOGIC UNIT: 03010103

SEGMENT ID.: VAW-L43R_SMR01A00

SEGMENT SIZE: 5.77 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2004

UPSTREAM LIMIT:

DESCRIPTION: Russell Cr. mouth on South Mayo R.

RIVER MILE: 18.19

LATITUDE: 36.56806 **LONGTITUDE:** -80.14876

DOWNSTREAM LIMIT:

DESCRIPTION: Spoon Cr. mouth on South Mayo R.

RIVER MILE: 12.42

LATITUDE: 36.56778 **LONGTITUDE:** -80.10586

The upper limit is the Russell Creek mouth on the South Mayo River and extends downstream to the confluence of Spoon Creek on the South Mayo River.

Note: The 1998 listed segment was erroneously assigned to watershed L45R. Changes in segment mileage are due to the use of the National Hydrography Dataset (NHD).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Fecal coliform bacteria cause this segment to only partially meet swimming use. Station 4ASMR016.09 records three exceedances from 22 samples of the instantaneous criterion of 1000 n/100 ml.

IMPAIRMENT SOURCE NPS - Agriculture

Agricultural nonpoint source runoff is believed to be the source.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Henry

STREAM NAME: Blackberry Creek

HYDROLOGIC UNIT: 03010103

SEGMENT ID.: VAW-L52R_BRY04A00

SEGMENT SIZE: 14.82 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2004 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Headwaters of Blackberry Cr.

RIVER MILE: 14.82

LATITUDE: 36.75694 **LONGTITUDE:** -80.13710

DOWNSTREAM LIMIT:

DESCRIPTION: Blackberry Cr. mouth on Smith R.

RIVER MILE: 0.00

LATITUDE: 36.75028 **LONGTITUDE:** -79.97854

This segment begins at the headwaters of Blackberry Creek (RM 13.63) and extends downstream to Blackberry Creek's mouth on the Smith River. The segment includes an unnamed tributary from the north. The mouth of the unnamed tributary is at 36° 44' 38" / 80° 03' 07". The segment spans the Charity, Sanville, Martinsville West and Bassett Quads.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Exceedance of the fecal coliform instantaneous criterion of 1000 n/100 ml and the geometric mean of 200 n/100 ml cause the segment overall to not support the swimming use. The data indicate the sporadic nature of the impairment within the primarily rural residential drainage.

Special monitoring of Blackberry Creek began in the fall of 1999 after complaints from local residents regarding sewer service in the Blackberry drainage. Listed below are the monitored sites showing instantaneous excursions / with total sample collections and geometric mean calculation exceedances / with total calculations. One ambient fixed site 4ABRY000.05 is included with the non-fixed sites below. An unnamed tributary comprises 1.19 miles of the overall segment.

2000W0034C Blackberry Cr. at Rt. 57A Bridge - 4/16 instant; 2/2 geomean.
2000W0034E Blackberry Cr. American Legion Bridge - 4/16 instant; 2/2 geomean.
4ABRY000.05 Blackberry Cr. American Legion Bridge - 3/20 instant.
2000W0034F Blackberry Cr. above Rt. 698 Bridge - 7/16 instant; 2/2 geomean.
2000W0034G Blackberry Cr. at Rt. 676 Bridge - 2/16 instant; 1/2 geomean.
2000W0034H Blackberry Cr. at end of Rt. 677 - 0/16 instant; 0/2 geomean.
2000W0034I Blackberry Cr. at Rt. 832 Bridge - 4/16 instant; 2/2 geomean.
2000W0034J Blackberry Cr. at Rt. 687 Bridge - 4/16 instant; 2/2 geomean.
2000W0034L Blackberry Cr. at Microfilm Road - 4/16 instant; 1/2 geomean.

2000W0034M UT (unnamed tributary) above confluence w/Blackberry Cr. - 0/14 instant; 0/1 geomean.
2000W0034O Blackberry Cr., UT below Westwood Lagoon - 10/14 instant; 1/1 geomean.
2000W0034P Blackberry Cr., UT immediately above Westwood Lagoon - 7/15 instant; 1/1 geomean.
2000W0034R Blackberry Cr. along Rt. 779 - 4/14 instant; 1/1 geomean.
2000W0034S Blackberry Cr., UT above Rt. 832 Bridge - 4/11 instant; 1/1 geomean.
2000W0034T Blackberry Cr., UT above Westwood Rt. 1226 - 5/14 instant; 0/1 geomean.
2000W0034U Blackberry Cr., UT below Westwood Lagoon - 6/9 instant.
2000W0034V Blackberry Cr., UT below Westwood Lagoon - 4/9 instant.

IMPAIRMENT SOURCE PS / NPS - Urban

The source of fecal coliform bacteria is believed to be mainly from minor municipal point sources and urban (residential) nonpoint source runoff. There is only minimal agricultural activity in the drainage.

The Henry County Public Service Authority has taken over the operation of former privately held treatment works in the drainage. Application for a Rural Housing Authority Grant for interceptor construction has been made. Interceptor construction in the drainage will remove of most of the existing small treatment works outfalls. Construction is anticipated to begin in the fall of 2002.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Henry

STREAM NAME: Smith River

HYDROLOGIC UNIT: 03010103

SEGMENT ID.: VAW-L52R_SRE01A00

SEGMENT SIZE: 3.25 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2004 - 2006

UPSTREAM LIMIT:

DESCRIPTION: Blackberry Cr. confluence on Smith R.

RIVER MILE: 36.53

LATITUDE: 36.75028 **LONGTITUDE:** -79.97851

DOWNSTREAM LIMIT:

DESCRIPTION: Reed Cr. mouth on Smith R.

RIVER MILE: 33.28

LATITUDE: 36.72111 **LONGTITUDE:** -79.94020

The segment begins at the Blackberry Creek mouth on Smith River VAW-L52R (Bassett Quad) and extends downstream to the Reed Creek confluence on the Smith River VAW-L53R (Martinsville West Quad).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Exceedance of the fecal coliform instantaneous criterion of 1000 n/100 ml and the geometric mean of 200 n/100 ml cause the segment overall to not support the swimming use. Special monitoring on Blackberry Creek (VAW-L52R) and the Smith River (VAW-L53R) find the exceedances.

Station 2000W0034A at Rt. 903 Bridge on the Smith River finds 2 of 16 samples exceeding the instantaneous criterion of 1000 n/100 ml. A single geometric mean calculation finds an exceedance of the 200 n/100 ml criterion. Station 2000W0034D on the Smith R. at Rt. 1228 Bridge upstream of Blackberry Creek finds only one instantaneous exceedance from 16 samples and no excursions of the geometric mean.

IMPAIRMENT SOURCE PS / NPS - Urban

The source of fecal coliform bacteria is believed to be mainly from minor municipal point sources in the Blackberry Creek drainage and urban (residential) nonpoint source runoff.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Henry County and Martinsville, City of

STREAM NAME: Smith River

HYDROLOGIC UNIT: 03010103

SEGMENT ID.: VAW-L54R_SRE05A00

SEGMENT SIZE: 13.77 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2004 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Martinsville Dam

RIVER MILE: 25.11

LATITUDE: 36.66444 **LONGTITUDE:** -79.88361

DOWNSTREAM LIMIT:

DESCRIPTION: Turkey Pen Br. mouth on the Smith R.

RIVER MILE: 11.34

LATITUDE: 36.56684 **LONGTITUDE:** -79.77867

The segment begins at the Martinsville Dam (Martinsville West Quad) and extends downstream to the mouth of Turkey Pen Branch on the Northwest Eden Quad.

Note: Modifications have been made to the 1998 303(d) Listed General Standard (benthic) segment. Slight changes in mileage are due to an adjustment to reflect hydrology and the use of the National Hydrography Dataset (NHD).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting, Aquatic Life Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal coliform - 10.18 miles, General Standard (benthic) - 13.77 miles

Swimming Use
Station 4ASRE022.71 (Footbridge above the Martinsville STP) shows full support of the swimming use from 59 samples with only four exceedances. This station was listed in Plantiffs Attachment B of the 1999 Consent Decree and is not impaired for the swimming use in this 3.59 mile upper segment.

Stations 4ASRE021.58 (Rt. 58 Bypass Bridge, Henry Co.) and 4ASRE015.43 (Rt. 636 Bridge) both record fecal coliform bacteria exceedances of the instantaneous criterion of 1000 n/100 ml. 4ASRE021.58 finds four of 29 and 4ASRE015.43 three of 29 excursions of the criterion. The waters are partially supporting of the swimming use for 10.18 miles from the Martinsville outfall (36°38'45" / 79°50'05") downstream to the mouth of Turkey Pen Branch.

Aquatic Life Use
4ASRE026.27 (below Martinsville Dam) and 4ASRE015.43 (Rt. 636 Bridge) both find slight or no impairment to the benthic community. However the entire 1998 303(d) Listed segment remains impaired as data are insufficient for de-listing two portions of the Smith for contravention of the General Standard. Insufficient data do not allow a partial delisting of an upper 3.59 mile portion or a lower 4.76 mile portion of the Smith River. Rapid Biological Assessment Protocol II (RBP II) surveys at 4ASRE026.27 indicate loss of substrate due to

hydrologic operations upstream of the site resulting in slight impairment. Three of four surveys show only slight impairment. The Martinsville Dam affects the river by periodically causing some of the stream substrate to become dewatered, thus reducing the amount of habitat available for benthic macroinvertebrate production. The Dam also affects water quality by releasing water that is higher in temperature and lower in oxygen than it would be without the impoundment.

Station 4ASRE015.43 located on the downstream end of the original 1998 segment provides improved results as well. Three of four RBP II surveys find no impairment and one slight impairment to the benthic community. In spring 1999, the benthic community showed signs of recovery finding the best Family Biotic Index (metric based on the pollution tolerance of taxa) score at this station for the five-year assessment window (1996-2000).

Both regular biological and intensive surveys find the benthic community moderately impacted causing only partial support of the aquatic life use representing 5.42 miles of the overall 13.77 mile 1998 segment. This portion of the Smith River incorporates Rapid Biological Assessment Protocol II (RBP II) stations 4ASRE22.30 (below the Martinsville STP), 4ASRE019.10 (Eggleston Falls), 4ASRE019.00 (above the Marrowbone Creek mouth). An intensive biological survey was conducted in October and November of 1996. Most stations mentioned above are part of the study finding moderate impacts to the benthic community. A 1998 Corbicula study indicate that chlorides may have an impact on the benthos.

Industrial plant closings in the Martinsville / Henry County area result in plans to close both the Upper Smith River and Lower Smith River Henry County PSA wastewater treatment facilities. Wastewater will be transported to the Martinsville STP. Greatly reduced influent chloride levels from industrial inputs to the Martinsville STP are anticipated with subsequent reductions of chlorides in the effluent. Improved benthic conditions are anticipated as a result.

IMPAIRMENT SOURCE NPS - Urban, PS / NPS - Urban

Swimming Use
Urban nonpoint source runoff is the believed source of the swimming use impairment.

Aquatic Life Use
The source of the benthic impairment is believed to be a mix of municipal point source and possible urban nonpoint source runoff. Large reductions in industrial wastewater treated at the Martinsville STP and Henry County Lower Smith River STP are the result of plant closings. Preliminary plans are to convert the Lower Smith River STP into a pump station. Wastewater flows would be pumped to the Martinsville City treatment facility. Improving benthic conditions are anticipated as a result.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Henry

STREAM NAME: Marrowbone Creek

HYDROLOGIC UNIT: 03010103

SEGMENT ID.: VAW-L55R_MRR01A00

SEGMENT SIZE: 4.33 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2004 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Henry Co. PSA WTP

RIVER MILE: 4.33

LATITUDE: 36.60306 **LONGTITUDE:** -79.87113

DOWNSTREAM LIMIT:

DESCRIPTION: Marrowbone Cr. mouth on Smith R.

RIVER MILE: 0.00

LATITUDE: 36.61333 **LONGTITUDE:** -79.82277

This segment begins at the Henry County PSA Water Treatment Plant on Marrowbone Creek and extends downstream to Marrowbone Creek's mouth on the Smith River. The entire segment is on the Northwest Eden Quad.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Five of 23 samples exceed the fecal coliform bacteria instantaneous criterion of 1000 n/100 ml at 4AMRR000.02 (Rt. 642 Bridge). This causes the segment to only partially support the swimming use.

IMPAIRMENT SOURCE NPS - Urban

The source of fecal coliform bacteria is believed to be urban nonpoint source runoff.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Henry

STREAM NAME: Leatherwood Creek

HYDROLOGIC UNIT: 03010103

SEGMENT ID.: VAW-L56R_LWD02A00

SEGMENT SIZE: 8.34 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2004 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Martinsville intake.

RIVER MILE: 8.34

LATITUDE: 36.68167 **LONGTITUDE:** -79.77945

DOWNSTREAM LIMIT:

DESCRIPTION: Leatherwood Cr. mouth on Smith R.

RIVER MILE: 0.00

LATITUDE: 36.61444 **LONGTITUDE:** -79.79188

This segment begins at the Martinsville City intake on Leatherwood Creek and extends downstream to the mouth of Leatherwood Creek on the Smith River. The segment spans the Martinsville East and Northwest Eden Quads.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

Exceedances of the fecal coliform bacteria instantaneous criterion were recorded at station 4ALWD002.54. Three of 23 samples exceed the 1000 n/100 ml criterion. The station is located at the Rt. 650 Bridge in Henry County. The segment partially supports the swimming use.

IMPAIRMENT SOURCE NPS - Agriculture/Urban

The source of fecal coliform bacteria is believed to be a mix of urban and agricultural nonpoint source runoff.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Pittsylvania, Danville, City of

STREAM NAME: Dan River

HYDROLOGIC UNIT: 03010103

SEGMENT ID.: VAC-L57R_DAN02A00L

SEGMENT SIZE: 2.38 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Schoolfield Dam

RIVER MILE: 45.21

LATITUDE: 36.57861 **LONGTITUDE:** -79.43417

DOWNSTREAM LIMIT:

DESCRIPTION: backwaters of impoundment

RIVER MILE: 42.82

LATITUDE: 36.58139 **LONGTITUDE:** -79.47306

Dan River mainstem from the Schoolfield Dam upstream to the backwaters of the impoundment.

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Dan River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 6/59 samples taken at 4ADAN075.22.

IMPAIRMENT SOURCE NPS - Agriculture

The source of the fecal coliform is agriculture.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Pittsylvania, Danville, City of

STREAM NAME: Dan River

HYDROLOGIC UNIT: 03010103

SEGMENT ID.: VAC-L57R_DAN04A00

SEGMENT SIZE: 7.89 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Virginia/North Carolina State Line (exiting Virginia) in Watershed L57R

RIVER MILE: 57.25

LATITUDE: 36.54056 **LONGTITUDE:** -79.51833

DOWNSTREAM LIMIT:

DESCRIPTION: Rt. 880 crossing (Virginia/North Carolina State Line entering Virginia)

RIVER MILE: 49.36

LATITUDE: 36.54500 **LONGTITUDE:** -79.60083

Dan River mainstem from the downstream most Virginia/North Carolina State Line (exiting Virginia) in Watershed L57R upstream to the Rt. 880 crossing (Virginia/North Carolina State Line entering Virginia).

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Dan River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 6/59 at 4ADAN075.22.

IMPAIRMENT SOURCE NPS - Agriculture

The source of the fecal coliform is agriculture.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Pittsylvania, Danville, City of

STREAM NAME: Dan River

HYDROLOGIC UNIT: 03010103

SEGMENT ID.: VAC-L57R_DAN03A00

SEGMENT SIZE: 4.15 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2010

UPSTREAM LIMIT:

DESCRIPTION: impounded backwaters of Schoolfield Dam

RIVER MILE: 49.36

LATITUDE: 36.58139 **LONGTITUDE:** -79.47306

DOWNSTREAM LIMIT:

DESCRIPTION: VA/NC State Line

RIVER MILE: 45.21

LATITUDE: 36.54111 **LONGTITUDE:** -79.49500

Dan River mainstem from the impounded backwaters of Schoolfield Dam upstream to the VA/NC State Line.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Dan River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 6/59 samples taken at 4ADAN075.22.

IMPAIRMENT SOURCE NPS - Agriculture

The source of the fecal coliform is agriculture.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Pittsylvania, Henry

STREAM NAME: Sandy River

HYDROLOGIC UNIT: 03010103

SEGMENT ID.: VAC-L58R_SRV01A00

SEGMENT SIZE: 8.39 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Dunbar Creek mouth

RIVER MILE: 8.39

LATITUDE: 36.63222 **LONGTITUDE:** -79.51972

DOWNSTREAM LIMIT:

DESCRIPTION: Sandy River confluence on the Dan River

RIVER MILE: 0.00

LATITUDE: 36.58694 **LONGTITUDE:** -79.41722

Sandy River mainstem from the Dunbar Creek mouth downstream to the Sandy River confluence on the Dan River.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Sandy River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 5/21 samples taken at 4ASRV000.20.

IMPAIRMENT SOURCE NPS - Agriculture

The source of the fecal coliform is agriculture and urban runoff.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Pittsylvania

STREAM NAME: Dan River, Lower

HYDROLOGIC UNIT: 03010104

SEGMENT ID.: VAC-L60R_DAN01A00

SEGMENT SIZE: 1.82 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: VA/NC State Line

RIVER MILE: 42.82

LATITUDE: 37.54194 **LONGTITUDE:** -79.21472

DOWNSTREAM LIMIT:

DESCRIPTION: Watershed L60R/L62R boundary

RIVER MILE: 41.00

LATITUDE: 36.56694 **LONGTITUDE:** -79.21639

Dan River mainstem from VA/NC State Line downstream to watershed L60R/L62R boundary downstream of the mouth of Mineral Springs Branch.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Fish Consumption Use - Partially Supporting, Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Exceedance of Fish Tissue SV, PCBs, VDH Health Advisory (PCBs), Fecal Coliform

This segment of Dan River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 20/58 samples taken at 4ADAN042.80. The segment is partially supporting the fish consumption use due to a fishing advisory issued by Virginia Department of Health (VDH) on 12/27/99. The advisory on the Dan River begins at the Virginia/North Carolina border north of Virginia Route 62 downstream to Kerr Reservoir at Staunton River State Park. Flathead and channel catfish taken from these waters may contain PCBs. VDH advises the public to eat no more than two 8 oz meals of these fish per month. The segment is fully supporting but threatened for the aquatic life use due to exceedances of the nutrient screening value. Total phosphorus exceeded the screening value in 7/58 samples taken at 4ADAN042.80.

IMPAIRMENT SOURCE NPS - Agriculture, VDH Fish Consumption Advisory

The source of the fecal coliform is agriculture. VDH has issued a fish consumption advisory due to PCBs.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Pittsylvania, Halifax

STREAM NAME: Double Creek

HYDROLOGIC UNIT: 03010104

SEGMENT ID.: VAC-L62R_DBC01A98

SEGMENT SIZE: 8.28 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Headwaters

RIVER MILE: 8.28

LATITUDE: 36.66361 **LONGTITUDE:** -79.26250

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth

RIVER MILE: 0.00

LATITUDE: 36.60833 **LONGTITUDE:** -79.16028

Double Creek from its headwaters to its mouth at the Dan River.

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Double Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 3/26 samples taken at 4ADBC002.19

IMPAIRMENT SOURCE NPS - Agriculture

The source of the fecal coliform is agriculture.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Halifax

STREAM NAME: Dan River

HYDROLOGIC UNIT: 03010104

SEGMENT ID.: VAC-L62R_DAN02A98

SEGMENT SIZE: 12.13 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Mineral Spring Branch

RIVER MILE: 41.00

LATITUDE: 36.56083 **LONGTITUDE:** -79.21639

DOWNSTREAM LIMIT:

DESCRIPTION: Route 658 Bridge

RIVER MILE: 28.87

LATITUDE: 36.64306 **LONGTITUDE:** -79.08972

Dan River from Mineral Springs Branch at the L60R/L62R watershed boundary to Route 658 bridge

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting, Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, PCBs

This segment of Dan River is not supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 20/58 samples taken at the Route 62 bridge (4ADAN042.80). The segment is partially supporting the fish consumption use due to a Fish Consumption Advisory issued by Virginia Department of Health (VDH) on 12/27/99. Flathead and channel catfish taken from these waters may contain PCBs. VDH advises eating no more than two 8 oz portions of these fish per month.

Fish and sediment data collected in the spring of 1999 indicated exceedances of screening values for PCB, chlordane, and DDT in fish tissue in several fish species collected at South Boston.

IMPAIRMENT SOURCE Unknown, VDH Fish Consumption Advisory

The sources of fecal coliform and PCBs are unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Halifax

STREAM NAME: Dan River

HYDROLOGIC UNIT: 03010104

SEGMENT ID.: VAC-L62R_DAN03A98

SEGMENT SIZE: 2.73 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Route 658 bridge

RIVER MILE: 28.87

LATITUDE: 36.64306 **LONGTITUDE:** -79.09000

DOWNSTREAM LIMIT:

DESCRIPTION: Birch Creek

RIVER MILE: 26.14

LATITUDE: 36.66333 **LONGTITUDE:** -79.05472

Dan River from Route 658 Bridge to Birch Creek

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Not Supporting, Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, PCBs

Segment assessed not supporting of the Swimmable use support goal based on excessive fecal coliform standard violations recorded at the Route 62 bridge (4ADAN042.80 - 20/58).

Fish and sediment data collected in the spring of 1999 indicated exceedances of screening values for PCB, chlordane, and DDT in fish tissue in several fish species collected at South Boston.

On December 27, 1999 VDH issues a fish consumption advisory for the Dan River from the Kerr Reservoir at Staunton State Park upstream to the VA-NC state line. The advisory warns about the presence of PCBs in channel and flathead catfish.

IMPAIRMENT SOURCE Unknown, VDH Fish Consumption Advisory

The sources of the fecal coliform and PCBs are unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Pittsylvania, Halifax

STREAM NAME: Birch Creek

HYDROLOGIC UNIT: 03010104

SEGMENT ID.: VAC-L63R_BIR01A98

SEGMENT SIZE: 4.83 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2001 - 2004

UPSTREAM LIMIT:

DESCRIPTION: Carlton Creek

RIVER MILE: 4.83

LATITUDE: 36.69417 **LONGTITUDE:** -79.11639

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth

RIVER MILE: 0.00

LATITUDE: 36.66361 **LONGTITUDE:** -79.05472

Birch Creek from Carlton Creek to its mouth at the Dan River.

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Birch Creek is not supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 7/26 samples taken at 4ABIR001.00.

IMPAIRMENT SOURCE NPS - Agriculture

The source of the fecal coliform is agriculture.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Halifax

STREAM NAME: Dan River

HYDROLOGIC UNIT: 03010104

SEGMENT ID.: VAC-L64R_DAN04A98

SEGMENT SIZE: 10.38 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Birch Creek

RIVER MILE: 26.14

LATITUDE: 36.66333 **LONGTITUDE:** -79.05472

DOWNSTREAM LIMIT:

DESCRIPTION: South Boston raw water intake location

RIVER MILE: 15.76

LATITUDE: 36.69222 **LONGTITUDE:** -78.90417

Dan River from Birch Creek to the South Boston raw water intake location

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting, Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, PCBs

Segment assessed not supporting of the Swimmable use support goal based on excessive fecal coliform standard violations recorded at the Route 501 bridge (4ADAN015.30 - 23/58) and at Route 659 Bridge (4ABIR001.00-7/26). In addition, there were 8 exceedances of the phosphorus screening value in 58 total samples at 4ADAN015.30.

Fish and sediment data collected in the spring of 1999 indicated exceedances of screening values for PCB, chlordane, and DDT in fish tissue in several fish species collected at South Boston.

On December 27, 1999 VDH issued a fish consumption advisory for the Dan River from the Kerr Reservoir at Staunton State Park upstream to the VA-NC state line. The advisory warns about the presence of PCBs in channel and flathead catfish.

IMPAIRMENT SOURCE Unknown, VDH Fish Consumption Advisory

The sources of the fecal coliform, PCBs, and phosphorus are unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Halifax

STREAM NAME: Dan River

HYDROLOGIC UNIT: 03010104

SEGMENT ID.: VAC-L64R_DAN05A98

SEGMENT SIZE: 6.49 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: South Boston raw water intake

RIVER MILE: 15.76

LATITUDE: 36.69222 **LONGTITUDE:** -78.90417

DOWNSTREAM LIMIT:

DESCRIPTION: Banister River

RIVER MILE: 9.27

LATITUDE: 36.69917 **LONGTITUDE:** -78.79556

Dan River from South Boston raw water intake location to Banister River

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting, Fish Consumption Use - Partially Supporting, Aquatic Life Use - Threatened

IMPAIRMENT CAUSE: Fecal Coliform, Fish Tissue - PCBs, Exceedance of Nutrient SV

Segment assessed not supporting of the Swimmable use support goal based on excessive fecal coliform standard violations recorded at the Route 501 bridge (4ADAN015.30 - 23/58) and at Route 659 Bridge (4ABIR001.00-7/26). In addition, there were 8 exceedances of the phosphorus screening value in 58 total samples at 4ADAN015.30.

Fish and sediment data collected in the spring of 1999 indicated exceedances of screening values for PCB, chlordane, and DDT in fish tissue in several fish species collected at South Boston.

On December 27, 1999 VDH issued a fish consumption advisory for the Dan River from the Kerr Reservoir at Staunton State Park upstream to the VA-NC state line. The advisory warns about the presence of PCBs in channel and flathead catfish.

IMPAIRMENT SOURCE Unknown, VDH Fish Consumption Advisory

The sources of the fecal coliform, PCBs, and phosphorus are unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Pittsylvania

STREAM NAME: Cherrystone Creek, Middle

HYDROLOGIC UNIT: 03010105

SEGMENT ID.: VAC-L66R_CRR02A00

SEGMENT SIZE: 3.38 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Chatham STP outfall

RIVER MILE: 6.12

LATITUDE: 36.82417 **LONGTITUDE:** -79.41333

DOWNSTREAM LIMIT:

DESCRIPTION: Chatham's water intake

RIVER MILE: 2.74

LATITUDE: 36.80556 **LONGTITUDE:** -79.37917

Cherrystone Creek mainstem from the Chatham STP outfall upstream to Chatham's water intake.

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Cherrystone Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 3/22 samples taken at 4ACRR003.56.

IMPAIRMENT SOURCE NPS - Agriculture/Urban

The source of the fecal coliform is agriculture and urban runoff/storm sewers.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Pittsylvania

STREAM NAME: Cherrystone Creek, Upper

HYDROLOGIC UNIT: 03010105

SEGMENT ID.: VAC-L66R_CRR03A00

SEGMENT SIZE: 2.45 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Chatham water intake

RIVER MILE: 8.57

LATITUDE: 36.85083 **LONGTITUDE:** -79.43056

DOWNSTREAM LIMIT:

DESCRIPTION: Cherrystone Creek Dam

RIVER MILE: 6.12

LATITUDE: 36.82417 **LONGTITUDE:** -79.41333

Cherrystone Creek from the town of Chatham water intake upstream to the Cherrystone Creek Dam.

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Cherrystone Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 3/22 samples taken at 4ACRR003.56.

IMPAIRMENT SOURCE NPS - Agriculture/Urban

The source of the fecal coliform is agriculture and urban runoff/storm sewers.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Pittsylvania, Halifax

STREAM NAME: Banister River

HYDROLOGIC UNIT: 03010105

SEGMENT ID.: VAC-L67R_BAN01A98

SEGMENT SIZE: 8.62 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Elkhorn Creek

RIVER MILE: 24.72

LATITUDE: 36.89833 **LONGTITUDE:** -79.11083

DOWNSTREAM LIMIT:

DESCRIPTION: Banister Lake

RIVER MILE: 16.10

LATITUDE: 36.81222 **LONGTITUDE:** -79.98472

Banister River from Elkhorn Creek to Banister Lake.

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Banister River is not supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 8/27 samples taken at 4ABAN023.28.

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Pittsylvania

STREAM NAME: Whitehorn Creek

HYDROLOGIC UNIT: 03010105

SEGMENT ID.: VAC-L68R_WRN01A00

SEGMENT SIZE: 10.53 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Where the creek forks just downstream of the Rt. 29 crossing.

RIVER MILE: 10.53

LATITUDE: 36.91778 **LONGTITUDE:** -79.37472

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth of Whitehorn Creek

RIVER MILE: 0.00

LATITUDE: 36.87444 **LONGTITUDE:** -79.24222

Whitehorn Creek mainstem from its mouth on Georges Creek upstream to where the creek forks just downstream of the Rt. 29 crossing.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Whitehorn Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 4/22 samples taken at 4AWRN005.5.

IMPAIRMENT SOURCE NPS - Agriculture

The source of the fecal coliform is agriculture.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Pittsylvania, Halifax

STREAM NAME: Sandy Creek

HYDROLOGIC UNIT: 03010105

SEGMENT ID.: VAC-L70R_SNA01A00

SEGMENT SIZE: 11.76 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Johns Run

RIVER MILE: 11.76

LATITUDE: 36.78556 **LONGTITUDE:** -79.14528

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth

RIVER MILE: 0.00

LATITUDE: 36.82667 **LONGTITUDE:** -79.02389

Sandy Creek from Johns Run to its mouth at the Banister River.

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Sandy Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 6/27 samples taken at 4ASNA000.20.

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Halifax

STREAM NAME: Banister River

HYDROLOGIC UNIT: 03010105

SEGMENT ID.: VAC-L71R_BAN05A00

SEGMENT SIZE: 12.37 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: 2000' downstream of Rte 360 bridge (Burlington Industries' raw water intake

RIVER MILE: 12.37

LATITUDE: 36.76722 **LONGTITUDE:** -78.90722

DOWNSTREAM LIMIT:

DESCRIPTION: Dan River

RIVER MILE: 0.00

LATITUDE: 36.69833 **LONGTITUDE:** -78.79472

Banister River from 2000' downstream of Rte 360 bridge (Burlington Industries' raw water intake) to Dan River.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Banister River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 9/54 samples taken at 4ABAN005.58.

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Halifax

STREAM NAME: Banister River

HYDROLOGIC UNIT: 03010105

SEGMENT ID.: VAC-L71R_BAN04A00

SEGMENT SIZE: 1.41 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Banister Lake Dam

RIVER MILE: 13.78

LATITUDE: 36.78167 **LONGTITUDE:** -78.02389

DOWNSTREAM LIMIT:

DESCRIPTION: Burlington Industries raw water intake

RIVER MILE: 12.33

LATITUDE: 36.69917 **LONGTITUDE:** -78.79361

Banister River from the Banister Lake Dam downstream to Burlington Industries raw water intake 2000' downstream or Route 360 bridge.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Banister River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 9/54 at 4ABAN005.58.

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Halifax

STREAM NAME: Banister River

HYDROLOGIC UNIT: 03010105

SEGMENT ID.: VAC-L71R_BAN02A98

SEGMENT SIZE: 7.82 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Sandy Creek

RIVER MILE: 23.89

LATITUDE: 36.82694 **LONGTITUDE:** -79.02389

DOWNSTREAM LIMIT:

DESCRIPTION: Banister Lake

RIVER MILE: 16.07

LATITUDE: 36.80222 **LONGTITUDE:** -78.98444

Banister River from Sandy Creek to Banister Lake

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Banister River is not supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 8/27 at 4ABAN023.28.

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Halifax, Mecklenburg

STREAM NAME: Aarons Creek

HYDROLOGIC UNIT: 03010104

SEGMENT ID.: VAC-L73R_AAR01A00

SEGMENT SIZE: 14.68 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Headwaters

RIVER MILE: 14.68

LATITUDE: 36.54222 **LONGTITUDE:** -78.73361

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth

RIVER MILE: 0.00

LATITUDE: 36.67250 **LONGTITUDE:** -78.70056

Aarons Creek from its headwaters at the VA/NC state line downstream to its mouth at the Dan River.

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Aarons Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 5/27 samples taken at 4AAAR004.72

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Halifax, Mecklenburg

STREAM NAME: Dan River

HYDROLOGIC UNIT: 03010104

SEGMENT ID.: VAC-L73R_DAN06A98

SEGMENT SIZE: 8.32 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Banister River at L64R/L73R watershed boundary

RIVER MILE: 9.27

LATITUDE: 36.69917 **LONGTITUDE:** -78.79556

DOWNSTREAM LIMIT:

DESCRIPTION: Roanoke River confluence (Kerr Reservoir)

RIVER MILE: 0.95

LATITUDE: 36.69250 **LONGTITUDE:** -78.65389

Dan River from Banister River at L64R/L73R watershed boundary to Roanoke River confluence (Kerr Reservoir)

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting, Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform, VDH Fish Consumption Advisory

Segment assessed partially supporting of the Swimmable use support goal based on excessive fecal coliform standard violations recorded at the Route 501 bridge (4ADAN015.30 - 23/58) and at Route 659 Bridge (4ABIR001.00-7/26). In addition, there were 8 exceedances of the phosphorus screening value in 58 total samples at 4ADAN015.30.

Fish and sediment data collected in the spring of 1999 indicated exceedances of screening values for PCB, chlordane, and DDT in fish tissue in several fish species collected at South Boston.

On December 27, 1999 VDH issued a fish consumption advisory for the Dan River from the Kerr Reservoir at Staunton State Park upstream to the VA-NC state line. The advisory warns about the presence of PCBs in channel and flathead catfish.

IMPAIRMENT SOURCE Unknown, PCB

The sources of fecal coliform and PCBs are unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Halifax

STREAM NAME: Little Coleman Creek

HYDROLOGIC UNIT: 03010104

SEGMENT ID.: VAC-L74R_LCC01A00

SEGMENT SIZE: 3.44 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Headwaters

RIVER MILE: 3.44

LATITUDE: 36.56778 **LONGTITUDE:** -78.97750

DOWNSTREAM LIMIT:

DESCRIPTION: Coleman Creek

RIVER MILE: 0.00

LATITUDE: 36.58278 **LONGTITUDE:** -78.92611

Little Coleman Creek from its headwaters to Coleman Creek.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Little Coleman Creek is not supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 3/11 at 4ALOL000.62. This is a confined animal feeding operation (CAFO) special study station.

IMPAIRMENT SOURCE Unknown

Source is unknown. There is not enough data to determine if the CAFO facility is the source of impairment in this segment.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Halifax

STREAM NAME: Hyco River

HYDROLOGIC UNIT: 03010104

SEGMENT ID.: VAC-L74R_HYC01A00

SEGMENT SIZE: 21.13 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Bluewing Creek

RIVER MILE: 21.13

LATITUDE: 36.62083 **LONGTITUDE:** -78.83806

DOWNSTREAM LIMIT:

DESCRIPTION: Mouth

RIVER MILE: 0.00

LATITUDE: 36.68778 **LONGTITUDE:** -78.77722

Hyco River from Bluewing Creek downstream to its mouth at the Dan River.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Hyco River is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 6/57 at 4AHYC002.70. The segment was assessed as fully supporting but threatened for the fish consumption use support goal due to 1999 and 2000 fish tissue studies. The studies indicated PCBs were present in 1 species.

IMPAIRMENT SOURCE Unknown

The sources of fecal coliform and PCBs are unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Halifax

STREAM NAME: Coleman Creek

HYDROLOGIC UNIT: 03010104

SEGMENT ID.: VAC-L74R_COL01A00

SEGMENT SIZE: 5.45 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Headwaters

RIVER MILE: 8.03

LATITUDE: 36.57639 **LONGTITUDE:** -78.99694

DOWNSTREAM LIMIT:

DESCRIPTION: Little Coleman Creek

RIVER MILE: 2.58

LATITUDE: 36.58222 **LONGTITUDE:** -78.92694

Coleman Creek from its headwaters to Little Coleman Creek

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Coleman Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 2/11 samples taken at 4AACLB005.17.

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Mecklenburg

STREAM NAME: Kerr Reservoir

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L75L_ROA05L98

SEGMENT SIZE: 48968 - Acres

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Roanoke/Dan Confluence

RIVER MILE: 45.62

LATITUDE: 36.73083 **LONGTITUDE:** -78.68306

DOWNSTREAM LIMIT:

DESCRIPTION: Dam

RIVER MILE: 18.04

LATITUDE: 36.59833 **LONGTITUDE:** -78.29722

All of Kerr Reservoir

CLEAN WATER ACT GOAL AND USE SUPPORT:

Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Fish Tissue - PCBs, heptachlor epoxide

All of Kerr Reservoir was assessed partially supporting of the Aquatic Life use support goal based on fish tissue data collected in the Roanoke River Basin. The study identified widespread PCB contamination in the Roanoke River Basin, including Kerr Reservoir. In addition, heptachlor epoxide exceeded the SV in one species.

IMPAIRMENT SOURCE Unknown

The source of the contamination is considered unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Mecklenburg

STREAM NAME: Little Buffalo Creek

HYDROLOGIC UNIT: 03010102

SEGMENT ID.: VAC-L76R_LFF01A00

SEGMENT SIZE: 2.56 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Headwaters

RIVER MILE: 2.56

LATITUDE: 36.60722 **LONGTITUDE:** -78.62944

DOWNSTREAM LIMIT:

DESCRIPTION: Buffalo Creek/Kerr Reservoir

RIVER MILE: 0.00

LATITUDE: 36.63611 **LONGTITUDE:** -78.63139

Little Buffalo Creek from its headwaters to Buffalo Creek, an arm of Kerr Reservoir.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Little Buffalo Creek is not supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 9/27 samples taken at 4ALFF001.85. This segment is threatened for the aquatic life use due to exceedances of the nutrient screening value. Total phosphorus exceeded the screening value in 6/26 samples taken at 4ALFF001.85.

IMPAIRMENT SOURCE Unknown

Source is believed to be Newton Mobile Home Court. Construction of an upgraded sewage treatment plant is ongoing and should be completed in February 2002. Additional monitoring will be performed to determine whether fecal coliform and phosphorus levels continue to violate water quality standards.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Mecklenburg

STREAM NAME: Roanoke River

HYDROLOGIC UNIT: 03010106

SEGMENT ID.: VAC-L78R_ROA06A98

SEGMENT SIZE: 5.85 - Miles

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: John H. Kerr Dam

RIVER MILE: 18.04

LATITUDE: 36.59833 **LONGTITUDE:** -78.29861

DOWNSTREAM LIMIT:

DESCRIPTION: Route 1 Bridge

RIVER MILE: 12.19

LATITUDE: 36.60667 **LONGTITUDE:** -78.20611

Headwaters of Lake Gaston from the John H. Kerr Dam to the I-85 bridge.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Aquatic Life Use - Not Supporting

IMPAIRMENT CAUSE: Dissolved Oxygen

This segment of Roanoke River is not supporting the aquatic life use support goal based on water quality monitoring just downstream of the dam (4AROA018.04) and at the Route 1 bridge (4AROA012.08). At 4AROA018.04, 19 violations of the DO standard were recorded in 64 samples collected, and at 4AROA012.08, there were 13 recorded violations of the DO standard in 38 samples collected. A special study conducted in 1995 identified the Route I-85 bridge as the approximate downstream limit of the impairment.

IMPAIRMENT SOURCE PS - Upstream Impoundment, Hypolimnetic Waters Release, Contaminated Sediments

The DO standard violations in this segment are seasonal, occurring only during summer months, and are attributed to the releases of hypolimnetic water releases through John H. Kerr Dam when the reservoir is stratified.

To correct the DO deficiencies in this segment, background DO levels need to be maintained at a minimum of 5.0 mg/l, which represents Virginia's water quality standard for average daily DO concentration.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Mecklenburg

STREAM NAME: Roanoke River

HYDROLOGIC UNIT: 03010106

SEGMENT ID.: VAC-L79R_ROA07A98

SEGMENT SIZE: 5.09 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Route 1 Bridge

RIVER MILE: 12.19

LATITUDE: 36.60667 **LONGTITUDE:** -78.20611

DOWNSTREAM LIMIT:

DESCRIPTION: I-85 Bridge

RIVER MILE: 7.10

LATITUDE: 36.57167 **LONGTITUDE:** -79.15583

Roanoke River from Route 1 Bridge to I-85 Bridge

CLEAN WATER ACT GOAL AND USE SUPPORT:

Aquatic Life Use - Not Supporting

IMPAIRMENT CAUSE: Dissolved Oxygen

This segment of the Roanoke River is not supporting the aquatic life use support goal based on water quality monitoring just downstream of the dam (4AROA018.04) and at the Route 1 bridge (4AROA012.08). At 4AROA018.04, 19 violations of the DO standard were recorded in 64 samples collected, and at 4AROA012.08, there were 13 recorded violations of the DO standard in 38 samples collected. A special study conducted in 1995 identified the Route I-85 bridge as the approximate downstream limit of the impairment.
The segment is fully supporting but threatened for fish consumption due to 1999 fish tissue studies that indicated PCBs in one species.

IMPAIRMENT SOURCE PS - Upstream Impoundment, Hypolimnetic Waters Release, Contaminated Sediments

The DO standard violations in this segment are seasonal, occurring only during summer months, and are attributed to the releases of hypolimnetic water releases through John H. Kerr Dam when the reservoir is stratified.

To correct the DO deficiencies in this segment, background DO levels need to be maintained at a minimum of 5.0 mg/l, which represents Virginia's water quality standard for average daily DO concentration.
The exact source of PCBs is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Mecklenburg

STREAM NAME: Miles Creek

HYDROLOGIC UNIT: 03010106

SEGMENT ID.: VAC-L79R_MES01A98

SEGMENT SIZE: 5.55 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Lake Gordon

RIVER MILE: 5.55

LATITUDE: 36.68806 **LONGTITUDE:** -78.21722

DOWNSTREAM LIMIT:

DESCRIPTION: Roanoke River

RIVER MILE: 0.00

LATITUDE: 36.62556 **LONGTITUDE:** -78.20944

Miles Creek from Lake Gordon to the Roanoke River

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Miles Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 3/24 samples taken at 4AAMES004.78.

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Mecklenburg

STREAM NAME: Flat Creek

HYDROLOGIC UNIT: 03010106

SEGMENT ID.: VAC-L79R_FLT02A96

SEGMENT SIZE: 7.75 - Miles

INITIAL LISTING: 1996 **TMDL Schedule** 2001 - 2004

UPSTREAM LIMIT:

DESCRIPTION: Town of South Hill STP discharge

RIVER MILE: 7.75

LATITUDE: 36.69694 **LONGTITUDE:** -78.13194

DOWNSTREAM LIMIT:

DESCRIPTION: Roanoke River (Lake Gaston)

RIVER MILE: 0.00

LATITUDE: 36.61750 **LONGTITUDE:** -78.17750

Segment begins at the South Hill Regional Sewage Treatment Plant discharge, and extends downstream to the Roanoke River.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Aquatic Life Use - Not Supporting, Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: General Standard (Benthic), Fecal Coliform, Exceedance of Nutrient SV

Biological monitoring of Flat Creek identified excessive solids deposits and a severely impaired benthic community downstream of the South Hill STP discharge. As a result, the segment is not supporting the aquatic life use. The segment is not supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 12/57 samples at 4AFLT008.79. In addition, there were 22 exceedances of the phosphorus screening value in 58 total samples at 4AFLT008.79.

The segment was assessed not supporting of the Swimmable use support goal based on a fecal coliform standard violation rate of 12/57 recorded at 4AFLT008.79.

IMPAIRMENT SOURCE PS - Municipal, Unknown

The impairment of Flat Creek is attributed to the South Hill Regional STP discharge.

The facility has largely been in compliance since the plant was upgraded, and a positive effect on water quality in Flat Creek is expected.

Continued monitoring to gauge the effects of the STP upgrade on water quality in this segment is ongoing.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Brunswick, Mecklenburg

STREAM NAME: Lake Gaston

HYDROLOGIC UNIT: 03010106

SEGMENT ID.: VAC-L80L_GAS01L00

SEGMENT SIZE: 20300 - Acres

INITIAL LISTING: 1998 **TMDL Schedule** 2001 - 2010

UPSTREAM LIMIT:

DESCRIPTION: John H. Kerr Dam

RIVER MILE: 18.04

LATITUDE: 36.59917 **LONGTITUDE:** -78.29889

DOWNSTREAM LIMIT:

DESCRIPTION: VA/NC State Line

RIVER MILE: 0.00

LATITUDE: 36.54556 **LONGTITUDE:** -78.05250

All of Lake Gaston within Virginia.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Aquatic Life Use - Not Supporting, Fish Consumption Use - Partially Supporting

IMPAIRMENT CAUSE: Dissolved Oxygen, PCBs

All of Lake Gaston was assessed not supporting the Aquatic Life use support goal based on excessive dissolved oxygen standard violations recorded at the state line in Mecklenburg County (4AROA000.00 - 7/17), and the off point station at the state line (4AROA004.54 - 6/14). A 1993 special study identified widespread PCB contamination in the Roanoke River Basin, including Lake Gaston. As a result, the lake is partially supporting the fish consumption use.

IMPAIRMENT SOURCE Unknown

The sources of the PCB contamination and dissolved oxygen violations are considered unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Mecklenburg

STREAM NAME: Great Creek

HYDROLOGIC UNIT: 03010106

SEGMENT ID.: VAC-L80R_GRT01A00

SEGMENT SIZE: 6.91 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2010

UPSTREAM LIMIT:

DESCRIPTION: Headwaters

RIVER MILE: 9.91

LATITUDE: 36.67500 **LONGTITUDE:** -78.07389

DOWNSTREAM LIMIT:

DESCRIPTION: Lake Gaston

RIVER MILE: 3.00

LATITUDE: 36.58722 **LONGTITUDE:** -78.09306

Great Creek from its headwaters downstream to the pool of Lake Gaston.

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Not Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Great Creek is not supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 6/20 samples taken at 4AGRT003.82.

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Brunswick, Mecklenburg

STREAM NAME: Poplar Creek

HYDROLOGIC UNIT: 03010106

SEGMENT ID.: VAC-L81R_POB01A00

SEGMENT SIZE: 3.41 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Main Creek

RIVER MILE: 3.41

LATITUDE: 36.63056 **LONGTITUDE:** -78.02778

DOWNSTREAM LIMIT:

DESCRIPTION: Lake Gaston

RIVER MILE: 0.00

LATITUDE: 36.58917 **LONGTITUDE:** -78.03806

Poplar Creek from Main Creek to Lake Gaston

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Poplar Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 3/26 samples taken at 4APOB006.35.

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.

2002 PART 1A IMPAIRED WATERS FACT SHEET

RIVER BASIN: ROANOKE RIVER BASIN

CITY/COUNTY: Brunswick

STREAM NAME: Pea Hill Creek

HYDROLOGIC UNIT: 03010106

SEGMENT ID.: VAC-L82R_PHC01A00

SEGMENT SIZE: 4.77 - Miles

INITIAL LISTING: 2002 **TMDL Schedule** 2010 - 2014

UPSTREAM LIMIT:

DESCRIPTION: Headwaters

RIVER MILE: 11.07

LATITUDE: 36.61056 **LONGTITUDE:** -77.94639

DOWNSTREAM LIMIT:

DESCRIPTION: Lake Gaston

RIVER MILE: 6.30

LATITUDE: 36.58306 **LONGTITUDE:** -77.89083

Pea Hill Creek from its headwaters downstream to the Lake Gaston pool.

CLEAN WATER ACT GOAL AND USE SUPPORT:
Swimmable Use - Partially Supporting

IMPAIRMENT CAUSE: Fecal Coliform

This segment of Pea Hill Creek is partially supporting the swimming use due to excessive counts of fecal coliform bacteria. Counts exceeded the instantaneous standard in 4/26 samples taken at 4APHC006.38.

IMPAIRMENT SOURCE Unknown

The source of fecal coliform is unknown.